SEQUENCE LISTING

<110> Eulenberg, Karsten
Steuernagel, Arnd
Haeder, Thomas
Meise, Martin
Guenter, Broenner

<120> Proteins Involved in the Regulation of Energy Homeostasis

<130> 2923-657

<150> PCT/EP03/04650
<151> 2003-05-02

<150> EP 02 010 948.4
<151> 2002-05-16

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<151> 2002-05-02

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Pro Gln Leu Gln Leu Gln His Leu Leu Pro Ala Ala Pro Thr Thr Pro
35 40 45

Ala Val Ile Ser Asn Pro Ile Asn Ser Ile Gly Pro Ile Asn Gln Ile
50 55 60

Ser Ser Ser Ser His Pro Ser Asn Asn Asn Gln Gln Ala Val Phe Glu
65 70 75 80

Lys Ala Ile Thr Ile Ser Ser Ile Ala Ile Lys Arg Arg Pro Thr Leu
85 90 95

Pro Gln Thr Pro Ala Ser Ala Pro Gln Val Leu Ser Pro Ser Pro Lys
100 105 110

Arg Gln Cys Ala Ala Ala Val Ser Val Leu Pro Val Thr Val Pro Val
115 120 125

Pro Val Pro Val Ser Val Pro Leu Pro Val Ser Val Pro Val Pro Val
130 135 140

Ser Val Lys Gly His Pro Ile Ser His Thr His Gln Ile Ala His Thr
145 150 155 160

His Gln Ile Ser His Ser His Pro Ile Ser His Pro His His His Gln
165 170 175

Leu Ser Phe Ala His Pro Thr Gln Phe Ala Ala Ala Val Ala Ala His
180 185 190

His Gln Gln Gln Gln Gln Gln Gln Ala Gln Gln Gln Gln Gln Ala Val
195 200 205

Gln Gln Gln Gln Gln Gln Ala Val Gln Gln Gln Gln Val Ala Tyr Ala
210 215 220

Val Ala Ala Ser Pro Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln His
225 230 235 240

Arg Leu Ala Gln Phe Asn Gln Ala Ala Ala Ala Ala Leu Leu Asn Gln
245 250 255

His Leu Gln Gln Gln His Gln Ala Gln Gln Gln Gln His Gln Ala Gln
260 265 270

Gln Gln Ser Leu Ala His Tyr Gly Gly Tyr Gln Leu His Arg Tyr Ala
275 280 285

Pro Gln Gln Gln Gln Gln His Ile Leu Leu Ser Ser Gly Ser Ser Ser
290 295 300

Ser Lys His Asn Ser Asn Asn Asn Ser Asn Thr Ser Ala Gly Ala Ala
305 310 315 320

Ser Ala Ala Val Pro Ile Ala Thr Ser Val Ala Ala Val Pro Thr Thr
325 330 335

Gly Gly Ser Leu Pro Asp Ser Pro Ala His Glu Ser His Ser His Glu
340 345 350

Ser Asn Ser Ala Thr Ala Ser Ala Pro Thr Thr Pro Ser Pro Ala Gly
355 360 365

Ser Val Thr Ser Ala Ala Pro Thr Ala Thr Ala Thr Ala Ala Ala Ala
370 375 380

Gly Ser Ala Ala Ala Thr Ala Ala Ala Thr Gly Thr Pro Ala Thr Ser
385 390 395 400

Ala Val Ser Asp Ser Asn Asn Asn Leu Asn Ser Ser Ser Ser Ser Asn
405 410 415

Ser Asn Ser Asn Ala Ile Met Glu Asn Gln Met Ala Leu Ala Pro Leu
420 425 430

Gly Leu Ser Gln Ser Met Asp Ser Val Asn Thr Ala Ser Asn Glu Glu
435 440 445

Glu Val Arg Thr Leu Phe Val Ser Gly Leu Pro Met Asp Ala Lys Pro
450 455 460

Arg Glu Leu Tyr Leu Leu Phe Arg Ala Tyr Glu Gly Tyr Glu Gly Ser
465 470 475 480

Leu Leu Lys Val Thr Ser Lys Asn Gly Lys Thr Ala Ser Pro Val Gly
485 490 495

Phe Val Thr Phe His Thr Arg Ala Gly Ala Glu Ala Ala Lys Gln Asp
500 505 510

Leu Gln Gly Val Arg Phe Asp Pro Asp Met Pro Gln Thr Ile Arg Leu
515 520 525

Glu Phe Ala Lys Ser Asn Thr Lys Val Ser Lys Pro Lys Pro Gln Pro
530 535 540

Asn Thr Ala Thr Thr Ala Ser His Pro Ala Leu Met His Pro Leu Thr
545 550 555 560

Gly His Leu Gly Gly Pro Phe Phe Pro Gly Gly Pro Glu Leu Trp His
565 570 575

His Pro Leu Ala Tyr Ser Ala Ala Ala Ala Ala Glu Leu Pro Gly Ala
580 585 590

Ala Ala Leu Gln His Ala Thr Leu Val His Pro Ala Leu His Pro Gln
595 600 605

Val Pro Val Arg Ser Tyr Leu
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cgggatttag gaaccggct 19

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atggaaattg cttggactgc tt 22

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<213> Drosophila melanogaster

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Met Glu Val Phe Gln Thr Asp Ser His Tyr Ile Phe Val Lys Arg Asp
1 5 10 15

Lys Ser Leu Trp Trp His Arg Arg Thr Ser Glu Phe Ser Ile Lys Ala
20 25 30

Gly Trp Asp Leu Ser Ser Val Asp Asp Ile Glu Cys Ile Gly Val Thr
35 40 45

His Gly Ile Val Gly Val Ile Ser Leu Pro Asn Val Tyr Glu Pro His
50 55 60

Leu Val Val Val Lys Glu Ala Ser Ala Val Gly Val Leu Tyr Pro Pro
65 70 75 80

His Leu Val Tyr Lys Ile Lys Ser Ile Cys Ile Leu Ser Ala Asp Asp
85 90 95

Pro Asp Thr Asp Leu Pro Asn Cys Thr Lys His Thr Lys Ser Asn Gln
100 105 110

Ser Thr Pro Thr His Ser Val Ser Thr Ser Asn Asn Asn Asn Ala Ser
115 120 125

Val Pro Ser Ser Gly Gly Gly Ser Ser Lys Ser Thr Lys Leu Phe Glu
130 135 140

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Gly Met Asn Lys Thr Trp Gly Ala Val Lys Ser Ala Gly Asn Thr Ile
145                 150                 155                 160

Lys Asn Thr Thr Gln Gln Ala Ala Asn Leu Ala Thr Lys Gln Val Lys
                165                 170                 175

Ser Ser Val Gly Ile Arg Glu Pro Arg His Ile Glu Arg Arg Ile Thr
            180                 185                 190

Glu Glu Leu His Lys Ile Phe Asp Glu Thr Asp Ser Phe Tyr Phe Ser
        195                 200                 205

Phe Asp Cys Asp Ile Thr Asn Asn Leu Gln Arg His Glu Ala Lys Ser
    210                 215                 220

Glu Glu Ser Gln Ser Gln Pro Asp Glu Arg Phe Phe Trp Asn Lys His
225                 230                 235                 240

Met Ile Arg Asp Leu Ile Asn Leu Asn Asp Lys Thr Trp Ile Leu Pro
                245                 250                 255

Ile Ile Gln Gly Phe Met Gln Val Glu Asn Cys Val Ile Gly Asn Glu
            260                 265                 270

Cys Phe Thr Leu Ala Leu Val Ser Arg Arg Ser Arg His Arg Ala Gly
        275                 280                 285

Thr Arg Tyr Lys Arg Arg Gly Val Asp Glu Lys Gly Asn Cys Ala Asn
    290                 295                 300

Tyr Val Glu Thr Glu Gln Ile Leu Ser Phe Arg His His Gln Leu Ser
305                 310                 315                 320

Phe Thr Gln Val Arg Gly Ser Val Pro Ile Tyr Trp Ser Gln Pro Gly
                325                 330                 335

Tyr Lys Tyr Arg Pro Pro Pro Arg Leu Asp Arg Gly Val Ala Glu Thr
            340                 345                 350

Gln Gln Ala Phe Glu Leu His Phe Thr Lys Glu Leu Glu Thr Tyr Gly
        355                 360                 365
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Arg Val Cys Ile Val Asn Leu Val Glu Gln Ser Gly Lys Glu Lys Thr
    370                 375                 380

Ile Gly Asp Ala Tyr Ala Asp His Val Ile Lys Leu Asn Asn Asp Arg
385                 390                 395                 400

Leu Ile Tyr Val Thr Phe Asp Phe His Asp Tyr Cys Arg Gly Met Arg
                405                 410                 415

Phe Glu Asn Val Ser Ala Leu Ile Asp Ala Val Gly Pro Glu Ala Gly
            420                 425                 430

Ala Met Gly Phe His Trp Gln Asp Gln Arg Gly Met Ile Cys Asn Gln
        435                 440                 445

Lys Ser Val Phe Arg Val Asn Cys Met Asp Cys Leu Asp Arg Thr Asn
    450                 455                 460

Val Val Gln Thr Ala Ile Gly Lys Ala Val Leu Glu Ser Gln Leu Val
465                 470                 475                 480

Lys Leu Gly Leu Ser Pro Pro Tyr Thr Pro Ile Pro Glu Gln Leu Lys
                485                 490                 495

Ser Pro Phe Met Val Leu Trp Ala Asn Asn Gly Asp Ile Ile Ser Arg
            500                 505                 510

Gln Tyr Ala Gly Thr Asn Ala Leu Lys Gly Asp Tyr Thr Arg Thr Gly
        515                 520                 525

Glu Arg Lys Ile Ser Gly Met Met Lys Asp Gly Met Asn Ser Ala Asn
    530                 535                 540

Arg Tyr Tyr Leu Ala Arg Phe Lys Asp Ser Tyr Arg Gln Ala Thr Ile
545                 550                 555                 560

Asp Leu Met Leu Gly Asn Gln Val Ser Ser Glu Ser Leu Ser Ala Leu
                565                 570                 575

Gly Gly Gln Ala Gly Pro Asp Glu Asn Asp Gly Thr Glu Asn Ala Glu
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            580                 585                 590

Gln Ala Lys Leu Leu Val Glu Asp Cys Arg Arg Leu Leu Leu Gly Thr
        595                 600                 605

Ala Gln Tyr Pro Val Gly Ala Trp Gly Leu Ile Asp Ala Asp Pro Ser
    610                 615                 620

Ser Gly Asp Ile Asn Glu Thr Glu Val Asp Thr Ile Leu Leu Leu Thr
625                 630                 635                 640

Asp Asp Cys Tyr Ile Val Ala Glu Tyr Asp Ser His Leu Asp Lys Ile
                645                 650                 655

Val Arg Phe Glu Lys Val Gln Leu Thr Gln Val Arg Leu Ile Glu Leu
            660                 665                 670

Gly Met His Gln Gln Thr Lys Ile Phe Gln Gly Ser Ala Pro Ala His
        675                 680                 685

Leu Cys Leu Arg Leu Asn Tyr Ser Val Asp Glu Gln Glu Gly Tyr Phe
    690                 695                 700

His Met Phe Arg Ser Ala Asn Leu Arg Phe Phe Asn Asn Met Ala Tyr
705                 710                 715                 720

Val Ile Lys Thr Gln Glu Glu Val Ala Glu Ser Met Thr Ser Ile Val
                725                 730                 735

Glu Met Phe Arg Ile Ala Leu Asp Asn Ala Gly Asn Thr Glu Val Arg
            740                 745                 750

Tyr Ile Thr Gly Gly Val Leu Gln Arg Arg Lys Ser Lys Leu Pro Thr
        755                 760                 765

Leu Asp Val Pro Arg Gly Met Pro Arg Asn Leu Ser Glu Ser Gln Leu
    770                 775                 780

Val Gln Leu Ser Ser Lys Ala Leu Ser Asn Met Ala Gly Gln Phe Ser
785                 790                 795                 800
```

```
Lys Leu Gly Gln Thr Phe Lys Lys Pro Gln Ala His Pro Ser Ser Leu
                805                 810                 815

Ala Ala Thr Met Asn Pro Gln Val Met Arg Gln Arg Asp Ser Glu Ile
            820                 825                 830

Glu Ser Gly Gln Glu Ala Glu Lys Ala Val Phe Thr Leu Gly Arg Lys
        835                 840                 845

His Arg Asn Ser Asn Ser Ala Ser Ser Thr Asp Thr Asp Glu His Asp
    850                 855                 860

Asn Ser Leu Tyr Glu Pro Glu Val Asp Ser Asp Val Glu Ile Ala Met
865                 870                 875                 880

Asp Lys Ser Asn Tyr Asn Glu Asn Ala Phe Leu Pro Ser Val Gly Ile
                885                 890                 895

Val Met Gly Asn Gln Lys Glu Asp Ser Pro Ser Ser Ser Asp Glu Ile
            900                 905                 910

Arg His
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<212> PRT
<213> Homo sapiens

<400> 15

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Met Glu Leu Phe Gln Ala Lys Asp His Tyr Ile Leu Gln Gln Gly Glu
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Arg Ala Leu Trp Cys Ser Arg Arg Asp Gly Gly Leu Gln Leu Arg Pro
            20                  25                  30

Ala Thr Asp Leu Leu Leu Ala Trp Asn Pro Ile Cys Leu Gly Leu Val
        35                  40                  45

Glu Gly Val Ile Gly Lys Ile Gln Leu His Ser Asp Leu Pro Trp Trp
    50                  55                  60
```

```
Leu Ile Leu Ile Arg Gln Lys Ala Leu Val Gly Lys Leu Pro Gly Asp
65                  70                  75                  80

His Glu Val Cys Lys Val Thr Lys Ile Ala Val Leu Ser Leu Ser Glu
                85                  90                  95

Met Glu Pro Gln Asp Leu Glu Leu Glu Leu Cys Lys Lys His His Phe
            100                 105                 110

Gly Ile Asn Lys Pro Glu Lys Ile Ile Pro Ser Pro Asp Asp Ser Lys
        115                 120                 125

Phe Leu Leu Lys Thr Phe Thr His Ile Lys Ser Asn Val Ser Ala Pro
    130                 135                 140

Asn Lys Lys Lys Val Lys Glu Ser Lys Glu Lys Glu Lys Leu Glu Arg
145                 150                 155                 160

Arg Leu Leu Glu Glu Leu Leu Lys Met Phe Met Asp Ser Glu Ser Phe
                165                 170                 175

Tyr Tyr Ser Leu Thr Tyr Asp Leu Thr Asn Ser Val Gln Arg Gln Ser
            180                 185                 190

Thr Gly Glu Arg Asp Gly Arg Pro Leu Trp Gln Lys Val Asp Asp Arg
        195                 200                 205

Phe Phe Trp Asn Lys Tyr Met Ile Gln Asp Leu Thr Glu Ile Gly Thr
    210                 215                 220

Pro Asp Val Asp Phe Trp Ile Ile Pro Met Ile Gln Gly Phe Val Gln
225                 230                 235                 240

Ile Glu Glu Leu Val Val Asn Tyr Thr Glu Ser Ser Asp Asp Glu Lys
                245                 250                 255

Ser Ser Pro Glu Thr Pro Pro Gln Glu Ser Thr Cys Val Asp Asp Ile
            260                 265                 270

His Pro Arg Phe Leu Val Ala Leu Ile Ser Arg Arg Ser Arg His Arg
        275                 280                 285
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Ala Gly Met Arg Tyr Lys Arg Arg Gly Val Asp Lys Asn Gly Asn Val
290 295 300

Ala Asn Tyr Val Glu Thr Glu Gln Leu Ile His Val His Asn His Thr
305 310 315 320

Leu Ser Phe Val Gln Thr Arg Gly Ser Val Pro Val Phe Trp Ser Gln
325 330 335

Val Gly Tyr Arg Tyr Asn Pro Arg Pro Arg Leu Asp Arg Ser Glu Lys
340 345 350

Glu Thr Val Ala Tyr Phe Cys Ala His Phe Glu Glu Gln Leu Asn Ile
355 360 365

Tyr Lys Lys Gln Val Ile Ile Asn Leu Val Asp Gln Ala Gly Arg Glu
370 375 380

Lys Ile Ile Gly Asp Ala Tyr Leu Lys Gln Val Leu Leu Phe Asn Asn
385 390 395 400

Ser His Leu Thr Tyr Val Ser Phe Asp Phe His Glu His Cys Arg Gly
405 410 415

Met Lys Phe Glu Asn Val Gln Thr Leu Thr Asp Ala Ile Tyr Asp Ile
420 425 430

Ile Leu Asp Met Lys Trp Cys Trp Val Asp Glu Ala Gly Val Ile Cys
435 440 445

Lys Gln Glu Gly Ile Phe Arg Val Asn Cys Met Asp Cys Leu Asp Arg
450 455 460

Thr Asn Val Val Gln Ala Ala Ile Ala Arg Val Val Met Glu Gln Gln
465 470 475 480

Leu Lys Lys Leu Gly Val Met Pro Pro Glu Gln Pro Leu Pro Val Lys
485 490 495

Cys Asn Arg Ile Tyr Gln Ile Met Trp Ala Asn Asn Gly Asp Ser Ile
500 505 510

Ser Arg Gln Tyr Ala Gly Thr Ala Ala Leu Lys Gly Asp Phe Thr Arg
515 520 525

Thr Gly Glu Arg Lys Leu Ala Gly Val Met Lys Asp Gly Val Asn Ser
530 535 540

Ala Asn Arg Tyr Tyr Leu Asn Arg Phe Lys Asp Ala Tyr Arg Gln Ala
545 550 555 560

Val Ile Asp Leu Met Gln Gly Ile Pro Val Thr Glu Asp Leu Tyr Ser
565 570 575

Ile Phe Thr Lys Glu Lys Glu His Glu Ala Leu His Lys Glu Asn Gln
580 585 590

Arg Ser His Gln Glu Leu Ile Ser Gln Leu Leu Gln Ser Tyr Met Lys
595 600 605

Leu Leu Leu Pro Asp Asp Glu Lys Phe His Gly Gly Trp Ala Leu Ile
610 615 620

Asp Cys Asp Pro Ser Leu Ile Asp Ala Thr His Arg Asp Val Asp Val
625 630 635 640

Leu Leu Leu Leu Ser Asn Ser Ala Tyr Tyr Val Ala Tyr Tyr Asp Asp
645 650 655

Glu Val Asp Lys Val Asn Gln Tyr Gln Arg Leu Ser Leu Glu Asn Leu
660 665 670

Glu Lys Ile Glu Ile Gly Pro Glu Pro Thr Leu Phe Gly Lys Pro Lys
675 680 685

Phe Ser Cys Met Arg Leu His Tyr Arg Tyr Lys Glu Ala Ser Gly Tyr
690 695 700

Phe His Thr Leu Arg Ala Val Met Arg Asn Pro Glu Glu Asp Gly Lys
705 710 715 720

Asp Thr Leu Gln Cys Ile Ala Glu Met Leu Gln Ile Thr Lys Gln Ala

725 730 735

Met Gly Ser Asp Leu Pro Ile Ile Glu Lys Lys Leu Glu Arg Lys Ser
740 745 750

Ser Lys Pro His Glu Asp Ile Ile Gly Ile Arg Ser Gln Asn Gln Gly
755 760 765

Ser Leu Ala Gln Gly Lys Asn Phe Leu Met Ser Lys Phe Ser Ser Leu
770 775 780

Asn Gln Lys Val Lys Gln Thr Lys Ser Asn Val Asn Ile Gly Asn Leu
785 790 795 800

Arg Lys Leu Gly Asn Phe Thr Lys Pro Glu Met Lys Val Asn Phe Leu
805 810 815

Lys Pro Asn Leu Lys Val Asn Leu Trp Lys Ser Asp Ser Ser Leu Glu
820 825 830

Thr Met Glu Asn Thr Gly Val Met Asp Lys Val Gln Ala Glu Ser Asp
835 840 845

Gly Asp Met Ser Ser Asp Asn Asp Ser Tyr His Ser Asp Glu Phe Leu
850 855 860

Thr Asn Ser Lys Ser Asp Glu Asp Arg Gln Leu Ala Asn Ser Leu Glu
865 870 875 880

Ser Val Gly Pro Ile Asp Tyr Val Leu Pro Ser Cys Gly Ile Ile Ala
885 890 895

Ser Ala Pro Arg Leu Gly Ser Arg Ser Gln Ser Leu Ser Ser Thr Asp
900 905 910

Ser Ser Val His
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<213> Drosophila melanogaster

<400> 16

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Ser Ala Phe Asn Asp Glu Ser Val Arg Leu Leu Ala Asn Ile Ala Asp
            20                  25                  30

Thr Ser Lys Asp Gly Leu Ile Ser Phe Ser Glu Phe Gln Ala Phe Glu
        35                  40                  45

Gly Leu Leu Cys Thr Pro Asp Ala Leu Tyr Arg Thr Ala Phe Gln Leu
    50                  55                  60

Phe Asp Arg Lys Gly Asn Gly Thr Val Ser Tyr Ala Asp Phe Ala Asp
65                  70                  75                  80

Val Val Gln Lys Thr Glu Leu His Ser Lys Ile Pro Phe Ser Leu Asp
                85                  90                  95

Gly Pro Phe Ile Lys Arg Tyr Phe Gly Asp Lys Lys Gln Arg Leu Ile
            100                 105                 110

Asn Tyr Ala Glu Phe Thr Gln Leu Leu His Asp Phe His Glu Glu His
        115                 120                 125

Ala Met Glu Ala Phe Arg Ser Lys Asp Pro Ala Gly Thr Gly Phe Ile
    130                 135                 140

Ser Pro Leu Asp Phe Gln Asp Ile Ile Val Asn Val Lys Arg His Leu
145                 150                 155                 160

Leu Thr Pro Gly Val Arg Asp Asn Leu Val Ser Val Thr Glu Gly His
                165                 170                 175

Lys Val Ser Phe Pro Tyr Phe Ile Ala Phe Thr Ser Leu Leu Asn Asn
            180                 185                 190

Met Glu Leu Ile Lys Gln Val Tyr Leu His Ala Thr Glu Gly Ser Arg
        195                 200                 205
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Thr Asp Met Ile Thr Lys Asp Gln Ile Leu Leu Ala Ala Gln Thr Met
210 215 220

Ser Gln Ile Thr Pro Leu Glu Ile Asp Ile Leu Phe His Leu Ala Gly
225 230 235 240

Ala Val His Gln Ala Gly Arg Ile Asp Tyr Ser Asp Leu Ser Asn Ile
245 250 255

Ala Pro Glu His Tyr Thr Lys His Met Thr His Arg Leu Ala Glu Ile
260 265 270

Lys Ala Val Glu Ser Pro Ala Asp Arg Ser Ala Phe Ile Gln Val Leu
275 280 285

Glu Ser Ser Tyr Arg Phe Thr Leu Gly Ser Phe Ala Gly Ala Val Gly
290 295 300

Ala Thr Val Val Tyr Pro Ile Asp Leu Val Lys Thr Arg Met Gln Asn
305 310 315 320

Gln Arg Ala Gly Ser Tyr Ile Gly Glu Val Ala Tyr Arg Asn Ser Trp
325 330 335

Asp Cys Phe Lys Lys Val Val Arg His Glu Gly Phe Met Gly Leu Tyr
340 345 350

Arg Gly Leu Leu Pro Gln Leu Met Gly Val Ala Pro Glu Lys Ala Ile
355 360 365

Lys Leu Thr Val Asn Asp Leu Val Arg Asp Lys Leu Thr Asp Lys Lys
370 375 380

Gly Asn Ile Pro Thr Trp Ala Glu Val Leu Ala Gly Gly Cys Ala Gly
385 390 395 400

Ala Ser Gln Val Val Phe Thr Asn Pro Leu Glu Ile Val Lys Ile Arg
405 410 415

Leu Gln Val Ala Gly Glu Ile Ala Ser Gly Ser Lys Ile Arg Ala Trp
420 425 430

Ser Val Val Arg Glu Leu Gly Leu Phe Gly Leu Tyr Lys Gly Ala Arg
435 440 445

Ala Cys Leu Leu Arg Asp Val Pro Phe Ser Ala Ile Tyr Phe Pro Thr
450 455 460

Tyr Ala His Thr Lys Ala Met Met Ala Asp Lys Asp Gly Tyr Asn His
465 470 475 480

Pro Leu Thr Leu Leu Ala Ala Gly Ala Ile Ala Gly Val Pro Ala Ala
485 490 495

Ser Leu Val Thr Pro Ala Asp Val Ile Lys Thr Arg Leu Gln Val Val
500 505 510

Ala Arg Ser Gly Gln Thr Thr Tyr Thr Gly Val Trp Asp Ala Thr Lys
515 520 525

Lys Ile Met Ala Glu Glu Gly Pro Arg Ala Phe Trp Lys Gly Thr Ala
530 535 540

Ala Arg Val Phe Arg Ser Ser Pro Gln Phe Gly Val Thr Leu Val Thr
545 550 555 560

Tyr Glu Leu Leu Gln Arg Leu Phe Tyr Val Asp Phe Gly Gly Thr Gln
565 570 575

Pro Lys Gly Ser Glu Ala His Lys Ile Thr Thr Pro Leu Glu Gln Ala
580 585 590

Ala Ala Ser Val Thr Thr Glu Asn Val Asp His Ile Gly Gly Tyr Arg
595 600 605

Ala Ala Val Pro Leu Leu Ala Gly Val Glu Ser Lys Phe Gly Leu Tyr
610 615 620

Leu Pro Arg Phe Gly Arg Gly Val Thr Ala Ala Ser Pro Ser Thr Ala
625 630 635 640

Thr Gly Ser

<210> 17
<211> 643
<212> PRT
<213> Homo sapiens

<400> 17

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Met Thr Pro Glu Asp Phe Val Gln Arg Tyr Leu Gly Leu Tyr Asn Asp
1               5                  10                  15

Pro Asn Ser Asn Pro Lys Ile Val Gln Leu Leu Ala Gly Val Ala Asp
            20                  25                  30

Gln Thr Lys Asp Gly Leu Ile Ser Tyr Gln Glu Phe Leu Ala Phe Glu
        35                  40                  45

Ser Val Leu Cys Ala Pro Asp Ser Met Phe Ile Val Ala Phe Gln Leu
    50                  55                  60

Phe Asp Lys Ser Gly Asn Gly Glu Val Thr Phe Glu Asn Val Lys Glu
65                  70                  75                  80

Ile Phe Gly Gln Thr Ile Ile His His His Ile Pro Phe Asn Trp Asp
                85                  90                  95

Cys Glu Phe Ile Arg Leu His Phe Gly His Asn Arg Lys Lys His Leu
            100                 105                 110

Asn Tyr Thr Glu Phe Thr Gln Phe Leu Gln Glu Leu Gln Leu Glu His
        115                 120                 125

Ala Arg Gln Ala Phe Ala Leu Lys Asp Lys Ser Lys Ser Gly Met Ile
    130                 135                 140

Ser Gly Leu Asp Phe Ser Asp Ile Met Val Thr Ile Arg Ser His Met
145                 150                 155                 160

Leu Thr Pro Phe Val Glu Glu Asn Leu Val Ser Ala Ala Gly Gly Ser
                165                 170                 175

Ile Ser His Gln Val Ser Phe Ser Tyr Phe Asn Ala Phe Asn Ser Leu
            180                 185                 190
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```
Leu Asn Asn Met Glu Leu Val Arg Lys Ile Tyr Ser Thr Leu Ala Gly
        195                 200                 205

Thr Arg Lys Asp Val Glu Val Thr Lys Glu Glu Phe Ala Gln Ser Ala
    210                 215                 220

Ile Arg Tyr Gly Gln Val Thr Pro Leu Glu Ile Asp Ile Leu Tyr Gln
225                 230                 235                 240

Leu Ala Asp Leu Tyr Asn Ala Ser Gly Arg Leu Thr Leu Ala Asp Ile
                245                 250                 255

Glu Arg Ile Ala Pro Leu Ala Glu Gly Ala Leu Pro Tyr Asn Leu Ala
            260                 265                 270

Glu Leu Gln Arg Gln Gln Ser Pro Gly Leu Gly Arg Pro Ile Trp Leu
        275                 280                 285

Gln Ile Ala Glu Ser Ala Tyr Arg Phe Thr Leu Gly Ser Val Ala Gly
    290                 295                 300

Ala Val Gly Ala Thr Ala Val Tyr Pro Ile Asp Leu Val Lys Thr Arg
305                 310                 315                 320

Met Gln Asn Gln Arg Gly Ser Gly Ser Val Val Gly Glu Leu Met Tyr
                325                 330                 335

Lys Asn Ser Phe Asp Cys Phe Lys Lys Val Leu Arg Tyr Glu Gly Phe
            340                 345                 350

Phe Gly Leu Tyr Arg Gly Leu Ile Pro Gln Leu Ile Gly Val Ala Pro
        355                 360                 365

Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Phe Val Arg Asp Lys Phe
    370                 375                 380

Thr Arg Arg Asp Gly Ser Val Pro Leu Pro Ala Glu Val Leu Ala Gly
385                 390                 395                 400

Gly Cys Ala Gly Gly Ser Gln Val Ile Phe Thr Asn Pro Leu Glu Ile
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405 410 415

Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Thr Thr Gly Pro Arg
420 425 430

Val Ser Ala Leu Asn Val Leu Arg Asp Leu Gly Ile Phe Gly Leu Tyr
435 440 445

Lys Gly Ala Lys Ala Cys Phe Leu Arg Asp Ile Pro Phe Ser Ala Ile
450 455 460

Tyr Phe Pro Val Tyr Ala His Cys Lys Leu Leu Leu Ala Asp Glu Asn
465 470 475 480

Gly His Val Gly Gly Leu Asn Leu Leu Ala Ala Gly Ala Met Ala Gly
485 490 495

Val Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile Lys Thr Arg
500 505 510

Leu Gln Val Ala Ala Arg Ala Gly Gln Thr Thr Tyr Ser Gly Val Ile
515 520 525

Asp Cys Phe Arg Lys Ile Leu Arg Glu Glu Gly Pro Ser Ala Phe Trp
530 535 540

Lys Gly Thr Ala Ala Arg Val Phe Arg Ser Ser Pro Gln Phe Gly Val
545 550 555 560

Thr Leu Val Thr Tyr Glu Leu Leu Gln Arg Trp Phe Tyr Ile Asp Phe
565 570 575

Gly Gly Leu Lys Pro Ala Gly Ser Glu Pro Thr Pro Lys Ser Arg Ile
580 585 590

Ala Asp Leu Pro Pro Ala Asn Pro Asp His Ile Gly Gly Tyr Arg Leu
595 600 605

Ala Thr Ala Thr Phe Ala Gly Ile Glu Asn Lys Phe Gly Leu Tyr Leu
610 615 620

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Pro Lys Phe Lys Ser Pro Ser Val Ala Val Val Gln Pro Lys Ala Ala
625                 630                 635                 640

Val Ala Ala
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<211> 635
<212> PRT
<213> Drosophila melanogaster

<400> 18

```
Met Thr Ser Glu Asp Phe Val Arg Lys Phe Leu Gly Leu Phe Ser Glu
1               5                   10                  15

Ser Ala Phe Asn Asp Glu Ser Val Arg Leu Leu Ala Asn Ile Ala Asp
            20                  25                  30

Thr Ser Lys Asp Gly Leu Ile Ser Phe Ser Glu Phe Gln Ala Phe Glu
        35                  40                  45

Gly Leu Leu Cys Thr Pro Asp Ala Leu Tyr Arg Thr Ala Phe Gln Leu
    50                  55                  60

Phe Asp Arg Lys Gly Asn Gly Thr Val Ser Tyr Ala Asp Phe Ala Asp
65                  70                  75                  80

Val Val Gln Lys Thr Glu Leu His Ser Lys Ile Pro Phe Ser Leu Asp
                85                  90                  95

Gly Pro Phe Ile Lys Arg Tyr Phe Gly Asp Lys Lys Gln Arg Leu Ile
            100                 105                 110

Asn Tyr Ala Glu Phe Thr Gln Leu Leu His Asp Phe His Glu Glu His
        115                 120                 125

Ala Met Glu Ala Phe Arg Ser Lys Asp Pro Ala Gly Thr Gly Phe Ile
    130                 135                 140

Ser Pro Leu Asp Phe Gln Asp Ile Ile Val Asn Val Lys Arg His Leu
145                 150                 155                 160
```

Leu Thr Pro Gly Val Arg Asp Asn Leu Val Ser Val Thr Glu Gly His
165 170 175

Lys Val Ser Phe Pro Tyr Phe Ile Ala Phe Thr Ser Leu Leu Asn Asn
180 185 190

Met Glu Leu Ile Lys Gln Val Tyr Leu His Ala Thr Glu Gly Ser Arg
195 200 205

Thr Asp Met Ile Thr Lys Asp Gln Ile Leu Leu Ala Ala Gln Thr Met
210 215 220

Ser Gln Ile Thr Pro Leu Glu Ile Asp Ile Leu Phe His Leu Ala Gly
225 230 235 240

Ala Val His Gln Ala Gly Arg Ile Asp Tyr Ser Asp Leu Ser Asn Ile
245 250 255

Ala Pro Glu His Tyr Thr Lys His Met Thr His Arg Leu Ala Glu Ile
260 265 270

Lys Ala Val Glu Ser Pro Ala Asp Arg Ser Ala Phe Ile Gln Val Leu
275 280 285

Glu Ser Ser Tyr Arg Phe Thr Leu Gly Ser Phe Ala Gly Ala Val Gly
290 295 300

Ala Thr Val Val Tyr Pro Ile Asp Leu Val Lys Thr Arg Met Gln Asn
305 310 315 320

Gln Arg Ala Gly Ser Tyr Ile Gly Glu Val Ala Tyr Arg Asn Ser Trp
325 330 335

Asp Cys Phe Lys Lys Val Val Arg His Glu Gly Phe Met Gly Leu Tyr
340 345 350

Arg Gly Leu Leu Pro Gln Leu Met Gly Val Ala Pro Glu Lys Ala Ile
355 360 365

Lys Leu Thr Val Asn Asp Leu Val Arg Asp Lys Leu Thr Asp Lys Lys
370 375 380

```
Gly Asn Ile Pro Thr Trp Ala Glu Val Leu Ala Gly Gly Cys Ala Gly
385                 390                 395                 400

Ala Ser Gln Val Val Phe Thr Asn Pro Leu Glu Ile Val Lys Ile Arg
                405                 410                 415

Leu Gln Val Ala Gly Glu Ile Ala Ser Gly Ser Lys Ile Arg Ala Trp
            420                 425                 430

Ser Val Val Arg Glu Leu Gly Leu Phe Gly Leu Tyr Lys Gly Ala Arg
        435                 440                 445

Ala Cys Leu Leu Arg Asp Val Pro Phe Ser Ala Ile Tyr Phe Pro Thr
    450                 455                 460

Tyr Ala His Thr Lys Ala Met Met Ala Asp Lys Asp Gly Tyr Asn His
465                 470                 475                 480

Pro Leu Thr Leu Leu Ala Ala Gly Ala Ile Ala Gly Val Pro Ala Ala
                485                 490                 495

Ser Leu Val Thr Pro Ala Asp Val Ile Lys Thr Arg Leu Gln Val Val
            500                 505                 510

Ala Arg Ser Gly Gln Thr Thr Tyr Thr Gly Val Trp Asp Ala Thr Lys
        515                 520                 525

Lys Ile Met Ala Glu Glu Gly Pro Arg Ala Phe Trp Lys Gly Thr Ala
    530                 535                 540

Ala Arg Val Phe Arg Ser Ser Pro Gln Phe Gly Val Thr Leu Val Thr
545                 550                 555                 560

Tyr Glu Leu Leu Gln Arg Leu Phe Tyr Val Asp Phe Gly Gly Thr Gln
                565                 570                 575

Pro Lys Gly Ser Glu Ala His Lys Ile Thr Thr Pro Leu Glu Gln Ala
            580                 585                 590

Ala Ala Ser Val Thr Thr Glu Asn Val Asp His Ile Gly Gly Tyr Arg
        595                 600                 605
```

```
Ala Ala Val Pro Leu Leu Ala Gly Val Glu Ser Lys Phe Gly Leu Tyr
    610                 615                 620

Leu Pro Arg Phe Gly Arg Gly Val Thr Ala Ala
625                 630                 635
```

<210> 19
<211> 632
<212> PRT
<213> Homo sapiens

<400> 19

```
Met Ser Pro Asn Asp Phe Val Thr Arg Tyr Leu Asn Ile Phe Gly Glu
1               5                   10                  15

Ser Gln Pro Asn Pro Lys Thr Val Glu Leu Leu Ser Gly Val Val Asp
            20                  25                  30

Gln Thr Lys Asp Gly Leu Ile Ser Phe Gln Glu Phe Val Ala Phe Glu
        35                  40                  45

Ser Val Leu Cys Ala Pro Asp Ala Leu Phe Met Val Ala Phe Gln Leu
    50                  55                  60

Phe Asp Lys Ala Gly Lys Gly Glu Val Thr Phe Glu Asp Val Lys Gln
65                  70                  75                  80

Val Phe Gly Gln Thr Thr Ile His Gln His Ile Pro Phe Asn Trp Asp
                85                  90                  95

Ser Glu Phe Val Gln Leu His Phe Gly Lys Glu Arg Lys Arg His Leu
            100                 105                 110

Thr Tyr Ala Glu Phe Thr Gln Phe Leu Leu Glu Ile Gln Leu Glu His
        115                 120                 125

Ala Lys Gln Ala Phe Val Gln Arg Asp Asn Ala Arg Thr Gly Arg Val
    130                 135                 140

Thr Ala Ile Asp Phe Arg Asp Ile Met Val Thr Ile Arg Pro His Val
145                 150                 155                 160
```

Leu Thr Pro Phe Val Glu Glu Cys Leu Val Ala Ala Ala Gly Gly Thr
165 170 175

Thr Ser His Gln Val Ser Phe Ser Tyr Phe Asn Gly Phe Asn Ser Leu
180 185 190

Leu Asn Asn Met Glu Leu Ile Arg Lys Ile Tyr Ser Thr Leu Ala Gly
195 200 205

Thr Arg Lys Asp Val Glu Val Thr Lys Glu Glu Phe Val Leu Ala Ala
210 215 220

Gln Lys Phe Gly Gln Val Thr Pro Met Glu Val Asp Ile Leu Phe Gln
225 230 235 240

Leu Ala Asp Leu Tyr Glu Pro Arg Gly Arg Met Thr Leu Ala Asp Ile
245 250 255

Glu Arg Ile Ala Pro Leu Glu Glu Gly Thr Leu Pro Phe Asn Leu Ala
260 265 270

Glu Ala Gln Arg Gln Lys Ala Ser Gly Asp Ser Ala Arg Pro Val Leu
275 280 285

Leu Gln Val Ala Glu Ser Ala Tyr Arg Phe Gly Leu Gly Ser Val Ala
290 295 300

Gly Ala Val Gly Ala Thr Ala Val Tyr Pro Ile Asp Leu Val Lys Thr
305 310 315 320

Arg Met Gln Asn Gln Arg Ser Thr Gly Ser Phe Val Gly Glu Leu Met
325 330 335

Tyr Lys Asn Ser Phe Asp Cys Phe Lys Lys Val Leu Arg Tyr Glu Gly
340 345 350

Phe Phe Gly Leu Tyr Arg Gly Leu Leu Pro Gln Leu Leu Gly Val Ala
355 360 365

Pro Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Phe Val Arg Asp Lys

370 375 380

Phe Met His Lys Asp Gly Ser Val Pro Leu Ala Ala Glu Ile Leu Ala
385 390 395 400

Gly Gly Cys Ala Gly Gly Ser Gln Val Ile Phe Thr Asn Pro Leu Glu
405 410 415

Ile Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Thr Thr Gly Pro
420 425 430

Arg Val Ser Ala Leu Ser Val Val Arg Asp Leu Gly Phe Phe Gly Ile
435 440 445

Tyr Lys Gly Ala Lys Ala Cys Phe Leu Arg Asp Ile Pro Phe Ser Ala
450 455 460

Ile Tyr Phe Pro Cys Tyr Ala His Val Lys Ala Ser Phe Ala Asn Glu
465 470 475 480

Asp Gly Gln Val Ser Pro Gly Ser Leu Leu Leu Ala Gly Ala Ile Ala
485 490 495

Gly Met Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile Lys Thr
500 505 510

Arg Leu Gln Val Ala Ala Arg Ala Gly Gln Thr Thr Tyr Ser Gly Val
515 520 525

Ile Asp Cys Phe Arg Lys Ile Leu Arg Glu Glu Gly Pro Lys Ala Leu
530 535 540

Trp Lys Gly Ala Gly Ala Arg Val Phe Arg Ser Ser Pro Gln Phe Gly
545 550 555 560

Val Thr Leu Leu Thr Tyr Glu Leu Leu Gln Arg Trp Phe Tyr Ile Asp
565 570 575

Phe Gly Gly Val Lys Pro Met Gly Ser Glu Pro Val Pro Lys Ser Arg
580 585 590

Ile Asn Leu Pro Ala Pro Asn Pro Asp His Val Gly Gly Tyr Lys Leu
595 600 605

Ala Val Ala Thr Phe Ala Gly Ile Glu Asn Lys Phe Gly Leu Tyr Leu
610 615 620

Pro Leu Phe Lys Pro Ser Val Ser
625 630

<210> 20
<211> 682
<212> PRT
<213> Drosophila melanogaster

<400> 20

Met Pro Leu Thr Lys Ser Leu Pro Asn Ser Pro Ser Leu Leu Lys Arg
1 5 10 15

Ala Gly Thr Glu Lys Leu Arg Glu Val Phe Leu Lys Tyr Ala Ser Ile
20 25 30

Gln Lys Asn Gly Glu His Tyr Met Thr Ser Glu Asp Phe Val Arg Lys
35 40 45

Phe Leu Gly Leu Phe Ser Glu Ser Ala Phe Asn Asp Glu Ser Val Arg
50 55 60

Leu Leu Ala Asn Ile Ala Asp Thr Ser Lys Asp Gly Leu Ile Ser Phe
65 70 75 80

Ser Glu Phe Gln Ala Phe Glu Gly Leu Leu Cys Thr Pro Asp Ala Leu
85 90 95

Tyr Arg Thr Ala Phe Gln Leu Phe Asp Arg Lys Gly Asn Gly Thr Val
100 105 110

Ser Tyr Ala Asp Phe Ala Asp Val Val Gln Lys Thr Glu Leu His Ser
115 120 125

Lys Ile Pro Phe Ser Leu Asp Gly Pro Phe Ile Lys Arg Tyr Phe Gly
130 135 140

```
Asp Lys Lys Gln Arg Leu Ile Asn Tyr Ala Glu Phe Thr Gln Leu Leu
145                 150                 155                 160

His Asp Phe His Glu Glu His Ala Met Glu Ala Phe Arg Ser Lys Asp
                165                 170                 175

Pro Ala Gly Thr Gly Phe Ile Ser Pro Leu Asp Phe Gln Asp Ile Ile
            180                 185                 190

Val Asn Val Lys Arg His Leu Leu Thr Pro Gly Val Arg Asp Asn Leu
        195                 200                 205

Val Ser Val Thr Glu Gly His Lys Val Ser Phe Pro Tyr Phe Ile Ala
    210                 215                 220

Phe Thr Ser Leu Leu Asn Asn Met Glu Leu Ile Lys Gln Val Tyr Leu
225                 230                 235                 240

His Ala Thr Glu Gly Ser Arg Thr Asp Met Ile Thr Lys Asp Gln Ile
                245                 250                 255

Leu Leu Ala Ala Gln Thr Met Ser Gln Ile Thr Pro Leu Glu Ile Asp
            260                 265                 270

Ile Leu Phe His Leu Ala Gly Ala Val His Gln Ala Gly Arg Ile Asp
        275                 280                 285

Tyr Ser Asp Leu Ser Asn Ile Ala Pro Glu His Tyr Thr Lys His Met
    290                 295                 300

Thr His Arg Leu Ala Glu Ile Lys Ala Val Glu Ser Pro Ala Asp Arg
305                 310                 315                 320

Ser Ala Phe Ile Gln Val Leu Glu Ser Ser Tyr Arg Phe Thr Leu Gly
                325                 330                 335

Ser Phe Ala Gly Ala Val Gly Ala Thr Val Val Tyr Pro Ile Asp Leu
            340                 345                 350

Val Lys Thr Arg Met Gln Asn Gln Arg Ala Gly Ser Tyr Ile Gly Glu
        355                 360                 365
```

```
Val Ala Tyr Arg Asn Ser Trp Asp Cys Phe Lys Lys Val Val Arg His
    370                 375                 380

Glu Gly Phe Met Gly Leu Tyr Arg Gly Leu Leu Pro Gln Leu Met Gly
385                 390                 395                 400

Val Ala Pro Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Leu Val Arg
                405                 410                 415

Asp Lys Leu Thr Asp Lys Lys Gly Asn Ile Pro Thr Trp Ala Glu Val
            420                 425                 430

Leu Ala Gly Gly Cys Ala Gly Ala Ser Gln Val Val Phe Thr Asn Pro
        435                 440                 445

Leu Glu Ile Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Ala Ser
    450                 455                 460

Gly Ser Lys Ile Arg Ala Trp Ser Val Val Arg Glu Leu Gly Leu Phe
465                 470                 475                 480

Gly Leu Tyr Lys Gly Ala Arg Ala Cys Leu Leu Arg Asp Val Pro Phe
                485                 490                 495

Ser Ala Ile Tyr Phe Pro Thr Tyr Ala His Thr Lys Ala Met Met Ala
            500                 505                 510

Asp Lys Asp Gly Tyr Asn His Pro Leu Thr Leu Leu Ala Ala Gly Ala
        515                 520                 525

Ile Ala Gly Val Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile
    530                 535                 540

Lys Thr Arg Leu Gln Val Val Ala Arg Ser Gly Gln Thr Thr Tyr Thr
545                 550                 555                 560

Gly Val Trp Asp Ala Thr Lys Lys Ile Met Ala Glu Glu Gly Pro Arg
                565                 570                 575

Ala Phe Trp Lys Gly Thr Ala Ala Arg Val Phe Arg Ser Ser Pro Gln
            580                 585                 590
```

Phe Gly Val Thr Leu Val Thr Tyr Glu Leu Leu Gln Arg Leu Phe Tyr
595 600 605

Val Asp Phe Gly Gly Thr Gln Pro Lys Gly Ser Glu Ala His Lys Ile
610 615 620

Thr Thr Pro Leu Glu Gln Ala Ala Ala Ser Val Thr Thr Glu Asn Val
625 630 635 640

Asp His Ile Gly Gly Tyr Arg Ala Ala Val Pro Leu Leu Ala Gly Val
645 650 655

Glu Ser Lys Phe Gly Leu Tyr Leu Pro Arg Phe Gly Arg Gly Val Thr
660 665 670

Ala Ala Ser Pro Ser Thr Ala Thr Gly Ser
675 680

<210> 21
<211> 678
<212> PRT
<213> Homo sapiens

<400> 21

Met Ala Val Lys Val Gln Thr Thr Lys Arg Gly Asp Pro His Glu Leu
1 5 10 15

Arg Asn Ile Phe Leu Gln Tyr Ala Ser Thr Glu Val Asp Gly Glu Arg
20 25 30

Tyr Met Thr Pro Glu Asp Phe Val Gln Arg Tyr Leu Gly Leu Tyr Asn
35 40 45

Asp Pro Asn Ser Asn Pro Lys Ile Val Gln Leu Leu Ala Gly Val Ala
50 55 60

Asp Gln Thr Lys Asp Gly Leu Ile Ser Tyr Gln Glu Phe Leu Ala Phe
65 70 75 80

Glu Ser Val Leu Cys Ala Pro Asp Ser Met Phe Ile Val Ala Phe Gln
85 90 95

```
Leu Phe Asp Lys Ser Gly Asn Gly Glu Val Thr Phe Glu Asn Val Lys
            100                 105                 110

Glu Ile Phe Gly Gln Thr Ile Ile His His His Ile Pro Phe Asn Trp
        115                 120                 125

Asp Cys Glu Phe Ile Arg Leu His Phe Gly His Asn Arg Lys Lys His
    130                 135                 140

Leu Asn Tyr Thr Glu Phe Thr Gln Phe Leu Gln Glu Leu Gln Leu Glu
145                 150                 155                 160

His Ala Arg Gln Ala Phe Ala Leu Lys Asp Lys Ser Lys Ser Gly Met
                165                 170                 175

Ile Ser Gly Leu Asp Phe Ser Asp Ile Met Val Thr Ile Arg Ser His
            180                 185                 190

Met Leu Thr Pro Phe Val Glu Glu Asn Leu Val Ser Ala Ala Gly Gly
        195                 200                 205

Ser Ile Ser His Gln Val Ser Phe Ser Tyr Phe Asn Ala Phe Asn Ser
    210                 215                 220

Leu Leu Asn Asn Met Glu Leu Val Arg Lys Ile Tyr Ser Thr Leu Ala
225                 230                 235                 240

Gly Thr Arg Lys Asp Val Glu Val Thr Lys Glu Glu Phe Ala Gln Ser
                245                 250                 255

Ala Ile Arg Tyr Gly Gln Val Thr Pro Leu Glu Ile Asp Ile Leu Tyr
            260                 265                 270

Gln Leu Ala Asp Leu Tyr Asn Ala Ser Gly Arg Leu Thr Leu Ala Asp
        275                 280                 285

Ile Glu Arg Ile Ala Pro Leu Ala Glu Gly Ala Leu Pro Tyr Asn Leu
    290                 295                 300

Ala Glu Leu Gln Arg Gln Gln Ser Pro Gly Leu Gly Arg Pro Ile Trp
```

305 310 315 320

Leu Gln Ile Ala Glu Ser Ala Tyr Arg Phe Thr Leu Gly Ser Val Ala
325 330 335

Gly Ala Val Gly Ala Thr Ala Val Tyr Pro Ile Asp Leu Val Lys Thr
340 345 350

Arg Met Gln Asn Gln Arg Gly Ser Gly Ser Val Val Gly Glu Leu Met
355 360 365

Tyr Lys Asn Ser Phe Asp Cys Phe Lys Lys Val Leu Arg Tyr Glu Gly
370 375 380

Phe Phe Gly Leu Tyr Arg Gly Leu Ile Pro Gln Leu Ile Gly Val Ala
385 390 395 400

Pro Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Phe Val Arg Asp Lys
405 410 415

Phe Thr Arg Arg Asp Gly Ser Val Pro Leu Pro Ala Glu Val Leu Ala
420 425 430

Gly Gly Cys Ala Gly Gly Ser Gln Val Ile Phe Thr Asn Pro Leu Glu
435 440 445

Ile Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Thr Thr Gly Pro
450 455 460

Arg Val Ser Ala Leu Asn Val Leu Arg Asp Leu Gly Ile Phe Gly Leu
465 470 475 480

Tyr Lys Gly Ala Lys Ala Cys Phe Leu Arg Asp Ile Pro Phe Ser Ala
485 490 495

Ile Tyr Phe Pro Val Tyr Ala His Cys Lys Leu Leu Leu Ala Asp Glu
500 505 510

Asn Gly His Val Gly Gly Leu Asn Leu Leu Ala Ala Gly Ala Met Ala
515 520 525

```
Gly Val Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile Lys Thr
    530                 535                 540

Arg Leu Gln Val Ala Ala Arg Ala Gly Gln Thr Thr Tyr Ser Gly Val
545                 550                 555                 560

Ile Asp Cys Phe Arg Lys Ile Leu Arg Glu Glu Gly Pro Ser Ala Phe
                565                 570                 575

Trp Lys Gly Thr Ala Ala Arg Val Phe Arg Ser Ser Pro Gln Phe Gly
            580                 585                 590

Val Thr Leu Val Thr Tyr Glu Leu Leu Gln Arg Trp Phe Tyr Ile Asp
        595                 600                 605

Phe Gly Gly Leu Lys Pro Ala Gly Ser Glu Pro Thr Pro Lys Ser Arg
    610                 615                 620

Ile Ala Asp Leu Pro Pro Ala Asn Pro Asp His Ile Gly Gly Tyr Arg
625                 630                 635                 640

Leu Ala Thr Ala Thr Phe Ala Gly Ile Glu Asn Lys Phe Gly Leu Tyr
                645                 650                 655

Leu Pro Lys Phe Lys Ser Pro Ser Val Ala Val Val Gln Pro Lys Ala
            660                 665                 670

Ala Val Ala Ala Thr Gln
        675
```

<210> 22
<211> 675
<212> PRT
<213> Homo sapiens

<400> 22

```
Met Ala Ala Ala Lys Val Ala Leu Thr Lys Arg Ala Asp Pro Ala Glu
1               5                   10                  15

Leu Arg Thr Ile Phe Leu Lys Tyr Ala Ser Ile Glu Lys Asn Gly Glu
            20                  25                  30
```

Phe Phe Met Ser Pro Asn Asp Phe Val Thr Arg Tyr Leu Asn Ile Phe
35 40 45

Gly Glu Ser Gln Pro Asn Pro Lys Thr Val Glu Leu Leu Ser Gly Val
50 55 60

Val Asp Gln Thr Lys Asp Gly Leu Ile Ser Phe Gln Glu Phe Val Ala
65 70 75 80

Phe Glu Ser Val Leu Cys Ala Pro Asp Ala Leu Phe Met Val Ala Phe
85 90 95

Gln Leu Phe Asp Lys Ala Gly Lys Gly Glu Val Thr Phe Glu Asp Val
100 105 110

Lys Gln Val Phe Gly Gln Thr Thr Ile His Gln His Ile Pro Phe Asn
115 120 125

Trp Asp Ser Glu Phe Val Gln Leu His Phe Gly Lys Glu Arg Lys Arg
130 135 140

His Leu Thr Tyr Ala Glu Phe Thr Gln Phe Leu Leu Glu Ile Gln Leu
145 150 155 160

Glu His Ala Lys Gln Ala Phe Val Gln Arg Asp Asn Ala Arg Thr Gly
165 170 175

Arg Val Thr Ala Ile Asp Phe Arg Asp Ile Met Val Thr Ile Arg Pro
180 185 190

His Val Leu Thr Pro Phe Val Glu Glu Cys Leu Val Ala Ala Ala Gly
195 200 205

Gly Thr Thr Ser His Gln Val Ser Phe Ser Tyr Phe Asn Gly Phe Asn
210 215 220

Ser Leu Leu Asn Asn Met Glu Leu Ile Arg Lys Ile Tyr Ser Thr Leu
225 230 235 240

Ala Gly Thr Arg Lys Asp Val Glu Val Thr Lys Glu Glu Phe Val Leu
245 250 255

```
Ala Ala Gln Lys Phe Gly Gln Val Thr Pro Met Glu Val Asp Ile Leu
            260                 265                 270

Phe Gln Leu Ala Asp Leu Tyr Glu Pro Arg Gly Arg Met Thr Leu Ala
        275                 280                 285

Asp Ile Glu Arg Ile Ala Pro Leu Glu Glu Gly Thr Leu Pro Phe Asn
    290                 295                 300

Leu Ala Glu Ala Gln Arg Gln Lys Ala Ser Gly Asp Ser Ala Arg Pro
305                 310                 315                 320

Val Leu Leu Gln Val Ala Glu Ser Ala Tyr Arg Phe Gly Leu Gly Ser
                325                 330                 335

Val Ala Gly Ala Val Gly Ala Thr Ala Val Tyr Pro Ile Asp Leu Val
            340                 345                 350

Lys Thr Arg Met Gln Asn Gln Arg Ser Thr Gly Ser Phe Val Gly Glu
        355                 360                 365

Leu Met Tyr Lys Asn Ser Phe Asp Cys Phe Lys Lys Val Leu Arg Tyr
    370                 375                 380

Glu Gly Phe Phe Gly Leu Tyr Arg Gly Leu Leu Pro Gln Leu Leu Gly
385                 390                 395                 400

Val Ala Pro Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Phe Val Arg
                405                 410                 415

Asp Lys Phe Met His Lys Asp Gly Ser Val Pro Leu Ala Ala Glu Ile
            420                 425                 430

Leu Ala Gly Gly Cys Ala Gly Gly Ser Gln Val Ile Phe Thr Asn Pro
        435                 440                 445

Leu Glu Ile Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Thr Thr
    450                 455                 460

Gly Pro Arg Val Ser Ala Leu Ser Val Val Arg Asp Leu Gly Phe Phe
465                 470                 475                 480
```

Gly Ile Tyr Lys Gly Ala Lys Ala Cys Phe Leu Arg Asp Ile Pro Phe
485 490 495

Ser Ala Ile Tyr Phe Pro Cys Tyr Ala His Val Lys Ala Ser Phe Ala
500 505 510

Asn Glu Asp Gly Gln Val Ser Pro Gly Ser Leu Leu Leu Ala Gly Ala
515 520 525

Ile Ala Gly Met Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile
530 535 540

Lys Thr Arg Leu Gln Val Ala Ala Arg Ala Gly Gln Thr Thr Tyr Ser
545 550 555 560

Gly Val Ile Asp Cys Phe Arg Lys Ile Leu Arg Glu Glu Gly Pro Lys
565 570 575

Ala Leu Trp Lys Gly Ala Gly Ala Arg Val Phe Arg Ser Ser Pro Gln
580 585 590

Phe Gly Val Thr Leu Leu Thr Tyr Glu Leu Leu Gln Arg Trp Phe Tyr
595 600 605

Ile Asp Phe Gly Gly Val Lys Pro Met Gly Ser Glu Pro Val Pro Lys
610 615 620

Ser Arg Ile Asn Leu Pro Ala Pro Asn Pro Asp His Val Gly Gly Tyr
625 630 635 640

Lys Leu Ala Val Ala Thr Phe Ala Gly Ile Glu Asn Lys Phe Gly Leu
645 650 655

Tyr Leu Pro Leu Phe Lys Pro Ser Val Ser Thr Ser Lys Ala Ile Gly
660 665 670

Gly Gly Pro
675

<210> 23

<211> 323
<212> PRT
<213> Drosophila melanogaster

<400> 23

Gln Gln Gln Gln Ser Thr Gln Ser Ile Ala Asp Tyr Leu Ala Gln Leu
1 5 10 15

Leu Lys Asp Arg Lys Gln Leu Ala Ala Phe Pro Asn Val Phe Thr His
20 25 30

Val Glu Arg Leu Leu Asp Glu Glu Ile Ala Arg Val Arg Ala Ser Leu
35 40 45

Phe Gln Ile Asn Gly Val Lys Lys Glu Pro Leu Thr Leu Pro Glu Pro
50 55 60

Glu Gly Ser Val Val Thr Met Asn Glu Lys Val Tyr Val Pro Val Arg
65 70 75 80

Glu His Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro Arg Gly
85 90 95

Met Thr Ala Lys Gln Leu Glu Gln Glu Thr Gly Cys Lys Ile Met Val
100 105 110

Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Asp Ala Asn Arg
115 120 125

Gly Lys Pro Asn Trp Glu His Leu Ser Asp Asp Leu His Val Leu Ile
130 135 140

Thr Val Glu Asp Thr Glu Asn Arg Ala Thr Val Lys Leu Ala Gln Ala
145 150 155 160

Val Ala Glu Val Gln Lys Leu Leu Val Pro Gln Ala Glu Gly Glu Asp
165 170 175

Glu Leu Lys Lys Arg Gln Leu Met Glu Leu Ala Ile Ile Asn Gly Thr
180 185 190

Tyr Arg Asp Thr Thr Ala Lys Ser Val Ala Val Cys Asp Glu Glu Trp

195 200 205

Arg Arg Leu Val Ala Ala Ser Asp Ser Arg Leu Leu Thr Ser Thr Gly
210 215 220

Leu Pro Gly Leu Ala Ala Gln Ile Arg Ala Pro Ala Ala Ala Pro Leu
225 230 235 240

Gly Ala Pro Leu Ile Leu Asn Pro Arg Met Thr Val Pro Thr Thr Ala
245 250 255

Ala Ser Ile Leu Ser Ala Gln Ala Ala Pro Thr Ala Ala Phe Asp Gln
260 265 270

Thr Gly His Gly Met Ile Phe Ala Pro Tyr Asp Tyr Ala Asn Tyr Ala
275 280 285

Ala Leu Ala Gly Asn Pro Leu Leu Thr Glu Tyr Ala Asp His Ser Val
290 295 300

Gly Ala Ile Lys Gln Gln Arg Arg Leu Ala Thr Asn Arg Glu His Pro
305 310 315 320

Tyr Gln Arg

<210> 24
<211> 325
<212> PRT
<213> Homo sapiens

<400> 24

Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1 5 10 15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
20 25 30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
35 40 45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser

```
    50                  55                  60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65                  70                  75                  80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270
```

```
Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro Tyr Thr
        275                 280                 285

Leu Ala Pro Ala Thr Ser Ile Leu Glu Tyr Pro Ile Glu Pro Ser Gly
    290                 295                 300

Val Leu Gly Ala Val Ala Thr Lys Val Arg Arg His Asp Met Arg Val
305                 310                 315                 320

His Pro Tyr Gln Arg
                325
```

<210> 25
<211> 325
<212> PRT
<213> Homo sapiens

<400> 25

```
Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1               5                   10                  15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
            20                  25                  30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
        35                  40                  45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
    50                  55                  60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65                  70                  75                  80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125
```

```
Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro Tyr Thr
        275                 280                 285

Leu Ala Pro Ala Thr Ser Ile Leu Glu Tyr Pro Ile Glu Pro Ser Gly
    290                 295                 300

Val Leu Gly Ala Val Ala Thr Lys Val Arg Arg His Asp Met Arg Val
305                 310                 315                 320

His Pro Tyr Gln Arg
                325
```

<210> 26
<211> 325
<212> PRT

<213> Homo sapiens

<400> 26

```
Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1               5                  10                  15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
            20                  25                  30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
        35                  40                  45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
    50                  55                  60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65                  70                  75                  80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205
```

```
Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro Tyr Thr
        275                 280                 285

Leu Ala Pro Ala Thr Ser Ile Leu Glu Tyr Pro Ile Glu Pro Ser Gly
    290                 295                 300

Val Leu Gly Ala Val Ala Thr Lys Val Arg Arg His Asp Met Arg Val
305                 310                 315                 320

His Pro Tyr Gln Arg
                325
```

<210> 27
<211> 309
<212> PRT
<213> Drosophila melanogaster

<400> 27

```
Gln Leu Leu Lys Asp Arg Lys Gln Leu Ala Ala Phe Pro Asn Val Phe
1               5                   10                  15

Thr His Val Glu Arg Leu Leu Asp Glu Glu Ile Ala Arg Val Arg Ala
            20                  25                  30

Ser Leu Phe Gln Ile Asn Gly Val Lys Lys Glu Pro Leu Thr Leu Pro
        35                  40                  45

Glu Pro Glu Gly Ser Val Val Thr Met Asn Glu Lys Val Tyr Val Pro
    50                  55                  60
```

```
Val Arg Glu His Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro
65                  70                  75                  80

Arg Gly Met Thr Ala Lys Gln Leu Glu Gln Glu Thr Gly Cys Lys Ile
                85                  90                  95

Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Asp Ala
            100                 105                 110

Asn Arg Gly Lys Pro Asn Trp Glu His Leu Ser Asp Asp Leu His Val
        115                 120                 125

Leu Ile Thr Val Glu Asp Thr Glu Asn Arg Ala Thr Val Lys Leu Ala
    130                 135                 140

Gln Ala Val Ala Glu Val Gln Lys Leu Leu Val Pro Gln Ala Glu Gly
145                 150                 155                 160

Glu Asp Glu Leu Lys Lys Arg Gln Leu Met Glu Leu Ala Ile Ile Asn
                165                 170                 175

Gly Thr Tyr Arg Asp Thr Thr Ala Lys Ser Val Ala Val Cys Asp Glu
            180                 185                 190

Glu Trp Arg Arg Leu Val Ala Ala Ser Asp Ser Arg Leu Leu Thr Ser
        195                 200                 205

Thr Gly Leu Pro Gly Leu Ala Ala Gln Ile Arg Ala Pro Ala Ala Ala
    210                 215                 220

Pro Leu Gly Ala Pro Leu Ile Leu Asn Pro Arg Met Thr Val Pro Thr
225                 230                 235                 240

Thr Ala Ala Ser Ile Leu Ser Ala Gln Ala Ala Pro Thr Ala Ala Phe
                245                 250                 255

Asp Gln Thr Gly His Gly Met Ile Phe Ala Pro Tyr Asp Tyr Ala Asn
            260                 265                 270

Tyr Ala Ala Leu Ala Gly Asn Pro Leu Leu Thr Glu Tyr Ala Asp His
        275                 280                 285
```

Ser Val Gly Ala Ile Lys Gln Gln Arg Arg Leu Ala Thr Asn Arg Glu
290 295 300

His Pro Tyr Gln Arg
305

<210> 28
<211> 311
<212> PRT
<213> Homo sapiens

<400> 28

Gln Leu Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys
1 5 10 15

Gly Ile Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg
20 25 30

Val Arg Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys
35 40 45

Arg Ser Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln
50 55 60

Glu Lys Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val
65 70 75 80

Gly Arg Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala
85 90 95

Glu Thr Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp
100 105 110

Lys Lys Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu
115 120 125

Asn Glu Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg
130 135 140

Ala Glu Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu
145 150 155 160

```
Val Pro Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met
                165                 170                 175

Glu Leu Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser
            180                 185                 190

Pro Ala Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg
        195                 200                 205

Ile Ile Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr
    210                 215                 220

Pro Thr Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln
225                 230                 235                 240

Thr Ala Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val
                245                 250                 255

Pro Pro Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro
            260                 265                 270

Tyr Thr Leu Ala Pro Ala Thr Ser Ile Leu Glu Tyr Pro Ile Glu Pro
        275                 280                 285

Ser Gly Val Leu Gly Ala Val Ala Thr Lys Val Arg Arg His Asp Met
    290                 295                 300

Arg Val His Pro Tyr Gln Arg
305                 310
```

<210> 29
<211> 284
<212> PRT
<213> Drosophila melanogaster

<400> 29

```
Gln Gln Gln Gln Ser Thr Gln Ser Ile Ala Asp Tyr Leu Ala Gln Leu
1               5                   10                  15

Leu Lys Asp Arg Lys Gln Leu Ala Ala Phe Pro Asn Val Phe Thr His
            20                  25                  30
```

Val Glu Arg Leu Leu Asp Glu Glu Ile Ala Arg Val Arg Ala Ser Leu
35 40 45

Phe Gln Ile Asn Gly Val Lys Lys Glu Pro Leu Thr Leu Pro Glu Pro
50 55 60

Glu Gly Ser Val Val Thr Met Asn Glu Lys Val Tyr Val Pro Val Arg
65 70 75 80

Glu His Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro Arg Gly
85 90 95

Met Thr Ala Lys Gln Leu Glu Gln Glu Thr Gly Cys Lys Ile Met Val
100 105 110

Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Asp Ala Asn Arg
115 120 125

Gly Lys Pro Asn Trp Glu His Leu Ser Asp Asp Leu His Val Leu Ile
130 135 140

Thr Val Glu Asp Thr Glu Asn Arg Ala Thr Val Lys Leu Ala Gln Ala
145 150 155 160

Val Ala Glu Val Gln Lys Leu Leu Val Pro Gln Ala Glu Gly Glu Asp
165 170 175

Glu Leu Lys Lys Arg Gln Leu Met Glu Leu Ala Ile Ile Asn Gly Thr
180 185 190

Tyr Arg Asp Thr Thr Ala Lys Ser Val Ala Val Cys Asp Glu Glu Trp
195 200 205

Arg Arg Leu Val Ala Ala Ser Asp Ser Arg Leu Leu Thr Ser Thr Gly
210 215 220

Leu Pro Gly Leu Ala Ala Gln Ile Arg Ala Pro Ala Ala Ala Pro Leu
225 230 235 240

Gly Ala Pro Leu Ile Leu Asn Pro Arg Met Thr Val Pro Thr Thr Ala

245 250 255

Ala Ser Ile Leu Ser Ala Gln Ala Ala Pro Thr Ala Ala Phe Asp Gln
260 265 270

Thr Gly His Gly Met Ile Phe Ala Pro Tyr Asp Tyr
275 280

<210> 30
<211> 285
<212> PRT
<213> Homo sapiens

<400> 30

Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1 5 10 15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
20 25 30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
35 40 45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
50 55 60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65 70 75 80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
85 90 95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
100 105 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
115 120 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
130 135 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu

145 150 155 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
165 170 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
180 185 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
195 200 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
210 215 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225 230 235 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
245 250 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
260 265 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
275 280 285

<210> 31
<211> 285
<212> PRT
<213> Homo sapiens

<400> 31

Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1 5 10 15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
20 25 30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
35 40 45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser

```
    50                  55                  60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65                  70                  75                  80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270
```

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
275 280 285

<210> 32
<211> 285
<212> PRT
<213> Homo sapiens

<400> 32

Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1 5 10 15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
20 25 30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
35 40 45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
50 55 60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65 70 75 80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
85 90 95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
100 105 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
115 120 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
130 135 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145 150 155 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
165 170 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
180 185 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
195 200 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
210 215 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225 230 235 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
245 250 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
260 265 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
275 280 285

<210> 33
<211> 285
<212> PRT
<213> Homo sapiens

<400> 33

Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1 5 10 15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
20 25 30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
35 40 45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
50 55 60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65 70 75 80

```
Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
        275                 280                 285
```

<210> 34
<211> 285
<212> PRT

<213> Homo sapiens

<400> 34

```
Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1               5                  10                  15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
            20                  25                  30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
        35                  40                  45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
    50                  55                  60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65                  70                  75                  80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205
```

```
Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
        275                 280                 285
```

<210> 35
<211> 285
<212> PRT
<213> Homo sapiens

<400> 35

```
Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1               5                   10                  15

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
            20                  25                  30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
        35                  40                  45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
    50                  55                  60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65                  70                  75                  80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
                85                  90                  95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
            100                 105                 110
```

```
Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
        115                 120                 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
    130                 135                 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145                 150                 155                 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
                165                 170                 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
            180                 185                 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
        195                 200                 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
    210                 215                 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225                 230                 235                 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
                245                 250                 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
            260                 265                 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
        275                 280                 285
```

<210> 36
<211> 285
<212> PRT
<213> Homo sapiens

<400> 36

```
Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu
1               5                   10                  15
```

Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile
20 25 30

Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg
35 40 45

Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser
50 55 60

Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys
65 70 75 80

Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg
85 90 95

Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr
100 105 110

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
115 120 125

Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu
130 135 140

Asp Leu His Val Leu Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu
145 150 155 160

Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro
165 170 175

Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu
180 185 190

Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala
195 200 205

Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile
210 215 220

Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr
225 230 235 240

Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala
245 250 255

Val Met Pro Asn Gly Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro
260 265 270

Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr Glu Tyr
275 280 285

<210> 37
<211> 313
<212> PRT
<213> Drosophila melanogaster

<400> 37

Asp Tyr Leu Ala Gln Leu Leu Lys Asp Arg Lys Gln Leu Ala Ala Phe
1 5 10 15

Pro Asn Val Phe Thr His Val Glu Arg Leu Leu Asp Glu Glu Ile Ala
20 25 30

Arg Val Arg Ala Ser Leu Phe Gln Ile Asn Gly Val Lys Lys Glu Pro
35 40 45

Leu Thr Leu Pro Glu Pro Glu Gly Ser Val Val Thr Met Asn Glu Lys
50 55 60

Val Tyr Val Pro Val Arg Glu His Pro Asp Phe Asn Phe Val Gly Arg
65 70 75 80

Ile Leu Gly Pro Arg Gly Met Thr Ala Lys Gln Leu Glu Gln Glu Thr
85 90 95

Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys
100 105 110

Lys Glu Asp Ala Asn Arg Gly Lys Pro Asn Trp Glu His Leu Ser Asp
115 120 125

Asp Leu His Val Leu Ile Thr Val Glu Asp Thr Glu Asn Arg Ala Thr
130 135 140

```
Val Lys Leu Ala Gln Ala Val Ala Glu Val Gln Lys Leu Leu Val Pro
145                 150                 155                 160

Gln Ala Glu Gly Glu Asp Glu Leu Lys Lys Arg Gln Leu Met Glu Leu
                165                 170                 175

Ala Ile Ile Asn Gly Thr Tyr Arg Asp Thr Thr Ala Lys Ser Val Ala
            180                 185                 190

Val Cys Asp Glu Glu Trp Arg Arg Leu Val Ala Ala Ser Asp Ser Arg
        195                 200                 205

Leu Leu Thr Ser Thr Gly Leu Pro Gly Leu Ala Ala Gln Ile Arg Ala
    210                 215                 220

Pro Ala Ala Ala Pro Leu Gly Ala Pro Leu Ile Leu Asn Pro Arg Met
225                 230                 235                 240

Thr Val Pro Thr Thr Ala Ala Ser Ile Leu Ser Ala Gln Ala Ala Pro
                245                 250                 255

Thr Ala Ala Phe Asp Gln Thr Gly His Gly Met Ile Phe Ala Pro Tyr
            260                 265                 270

Asp Tyr Ala Asn Tyr Ala Ala Leu Ala Gly Asn Pro Leu Leu Thr Glu
        275                 280                 285

Tyr Ala Asp His Ser Val Gly Ala Ile Lys Gln Gln Arg Arg Leu Ala
    290                 295                 300

Thr Asn Arg Glu His Pro Tyr Gln Arg
305                 310
```

<210> 38
<211> 315
<212> PRT
<213> Homo sapiens

<400> 38

```
Asp Tyr Leu Met Gln Leu Met Asn Asp Lys Lys Leu Met Ser Ser Leu
1               5                   10                  15
```

```
Pro Asn Phe Cys Gly Ile Phe Asn His Leu Glu Arg Leu Leu Asp Glu
            20                  25                  30

Glu Ile Ser Arg Val Arg Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly
        35                  40                  45

Ser Thr Glu Lys Arg Ser Ala Glu Leu Pro Asp Ala Val Gly Pro Ile
    50                  55                  60

Val Gln Leu Gln Glu Lys Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp
65                  70                  75                  80

Phe Asn Phe Val Gly Arg Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys
                85                  90                  95

Gln Leu Glu Ala Glu Thr Gly Cys Lys Ile Met Val Arg Gly Lys Gly
            100                 105                 110

Ser Met Arg Asp Lys Lys Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn
        115                 120                 125

Trp Glu His Leu Asn Glu Asp Leu His Val Leu Ile Thr Val Glu Asp
    130                 135                 140

Ala Gln Asn Arg Ala Glu Ile Lys Leu Lys Arg Ala Val Glu Glu Val
145                 150                 155                 160

Lys Lys Leu Leu Val Pro Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys
                165                 170                 175

Met Gln Leu Met Glu Leu Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala
            180                 185                 190

Asn Ile Lys Ser Pro Ala Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln
        195                 200                 205

Ala Ala Pro Arg Ile Ile Thr Gly Pro Ala Pro Val Leu Pro Pro Ala
    210                 215                 220

Ala Leu Arg Thr Pro Thr Pro Ala Gly Pro Thr Ile Met Pro Leu Ile
```

225 230 235 240

Arg Gln Ile Gln Thr Ala Val Met Pro Asn Gly Thr Pro His Pro Thr
245 250 255

Ala Ala Ile Val Pro Pro Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro
260 265 270

Tyr Glu Tyr Pro Tyr Thr Leu Ala Pro Ala Thr Ser Ile Leu Glu Tyr
275 280 285

Pro Ile Glu Pro Ser Gly Val Leu Gly Ala Val Ala Thr Lys Val Arg
290 295 300

Arg His Asp Met Arg Val His Pro Tyr Gln Arg
305 310 315

<210> 39
<211> 405
<212> PRT
<213> Drosophila melanogaster

<400> 39

Met Ser Val Cys Glu Ser Lys Ala Val Val Gln Gln Gln Leu Gln Gln
1 5 10 15

His Leu Gln Gln Gln Ala Ala Ala Ala Val Val Ala Val Ala Gln Gln
20 25 30

Gln Gln Ala Gln Ala Gln Ala Gln Ala Gln Ala Gln Ala Gln Gln Gln
35 40 45

Gln Gln Ala Pro Gln Val Val Val Pro Met Thr Pro Gln His Leu Thr
50 55 60

Pro Gln Gln Gln Gln Gln Ser Thr Gln Ser Ile Ala Asp Tyr Leu Ala
65 70 75 80

Gln Leu Leu Lys Asp Arg Lys Gln Leu Ala Ala Phe Pro Asn Val Phe
85 90 95

Thr His Val Glu Arg Leu Leu Asp Glu Glu Ile Ala Arg Val Arg Ala

100 105 110

Ser Leu Phe Gln Ile Asn Gly Val Lys Lys Glu Pro Leu Thr Leu Pro
115 120 125

Glu Pro Glu Gly Ser Val Val Thr Met Asn Glu Lys Val Tyr Val Pro
130 135 140

Val Arg Glu His Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro
145 150 155 160

Arg Gly Met Thr Ala Lys Gln Leu Glu Gln Glu Thr Gly Cys Lys Ile
165 170 175

Met Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Asp Ala
180 185 190

Asn Arg Gly Lys Pro Asn Trp Glu His Leu Ser Asp Asp Leu His Val
195 200 205

Leu Ile Thr Val Glu Asp Thr Glu Asn Arg Ala Thr Val Lys Leu Ala
210 215 220

Gln Ala Val Ala Glu Val Gln Lys Leu Leu Val Pro Gln Ala Glu Gly
225 230 235 240

Glu Asp Glu Leu Lys Lys Arg Gln Leu Met Glu Leu Ala Ile Ile Asn
245 250 255

Gly Thr Tyr Arg Asp Thr Thr Ala Lys Ser Val Ala Val Cys Asp Glu
260 265 270

Glu Trp Arg Arg Leu Val Ala Ala Ser Asp Ser Arg Leu Leu Thr Ser
275 280 285

Thr Gly Leu Pro Gly Leu Ala Ala Gln Ile Arg Ala Pro Ala Ala Ala
290 295 300

Pro Leu Gly Ala Pro Leu Ile Leu Asn Pro Arg Met Thr Val Pro Thr
305 310 315 320

```
Thr Ala Ala Ser Ile Leu Ser Ala Gln Ala Ala Pro Thr Ala Ala Phe
                325                 330                 335

Asp Gln Thr Gly His Gly Met Ile Phe Ala Pro Tyr Asp Tyr Ala Asn
            340                 345                 350

Tyr Ala Ala Leu Ala Gly Asn Pro Leu Leu Thr Glu Tyr Ala Asp His
        355                 360                 365

Ser Val Gly Ala Ile Lys Gln Gln Arg Arg Leu Ala Thr Asn Arg Glu
    370                 375                 380

His Pro Tyr Gln Arg Ala Thr Val Gly Val Pro Ala Lys Pro Ala Gly
385                 390                 395                 400

Phe Ile Glu Ile Gln
                405
```

<210> 40
<211> 363
<212> PRT
<213> Homo sapiens

<400> 40

```
Met Leu Ser Leu Ser Ser Leu Arg Arg Asn Ser Gly Arg Asn Ser Gly
1               5                  10                  15

Ser Cys Gly Ala Trp Asn Met Val Gly Glu Met Glu Thr Lys Glu Lys
            20                  25                  30

Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu Met Asn Asp Lys Lys
        35                  40                  45

Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile Phe Asn His Leu Glu
    50                  55                  60

Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg Lys Asp Met Tyr Asn
65                  70                  75                  80

Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser Ala Glu Leu Pro Asp
                85                  90                  95
```

```
Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys Leu Tyr Val Pro Val
            100                 105                 110

Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro Arg
        115                 120                 125

Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr Gly Cys Lys Ile Met
    130                 135                 140

Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Glu Gln Asn
145                 150                 155                 160

Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu Asp Leu His Val Leu
                165                 170                 175

Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu Ile Lys Leu Lys Arg
            180                 185                 190

Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro Ala Ala Glu Gly Glu
        195                 200                 205

Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu Ala Ile Leu Asn Gly
    210                 215                 220

Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala Leu Ala Phe Ser Leu
225                 230                 235                 240

Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile Thr Gly Pro Ala Pro
                245                 250                 255

Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr Pro Ala Gly Pro Thr
            260                 265                 270

Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala Val Met Pro Asn Gly
        275                 280                 285

Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro Gly Pro Glu Ala Gly
    290                 295                 300

Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro Tyr Thr Leu Ala Pro Ala Thr
305                 310                 315                 320
```

```
Ser Ile Leu Glu Tyr Pro Ile Glu Pro Ser Gly Val Leu Gly Ala Val
                325                 330                 335

Ala Thr Lys Val Arg Arg His Asp Met Arg Val His Pro Tyr Gln Arg
            340                 345                 350

Ile Val Thr Ala Asp Arg Ala Ala Thr Gly Asn
        355                 360
```

<210> 41
<211> 347
<212> PRT
<213> Homo sapiens

<400> 41

```
Met Leu Ser Leu Ser Ser Leu Arg Arg Asn Ser Gly Arg Asn Ser Gly
1               5                   10                  15

Ser Cys Gly Ala Trp Asn Met Val Gly Glu Met Glu Thr Lys Glu Lys
            20                  25                  30

Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu Met Asn Asp Lys Lys
        35                  40                  45

Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile Phe Asn His Leu Glu
    50                  55                  60

Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg Lys Asp Met Tyr Asn
65                  70                  75                  80

Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser Ala Glu Leu Pro Asp
                85                  90                  95

Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys Leu Tyr Val Pro Val
            100                 105                 110

Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro Arg
        115                 120                 125

Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr Gly Cys Lys Ile Met
    130                 135                 140
```

```
Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Glu Gln Asn
145                 150                 155                 160

Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu Asp Leu His Val Leu
                165                 170                 175

Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu Ile Lys Leu Lys Arg
            180                 185                 190

Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro Ala Ala Glu Gly Glu
        195                 200                 205

Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu Ala Ile Leu Asn Gly
    210                 215                 220

Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala Leu Ala Phe Ser Leu
225                 230                 235                 240

Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile Thr Gly Pro Ala Pro
                245                 250                 255

Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr Pro Ala Gly Pro Thr
            260                 265                 270

Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala Val Met Pro Asn Gly
        275                 280                 285

Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro Gly Pro Glu Ala Gly
    290                 295                 300

Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro Tyr Thr Leu Ala Pro Ala Thr
305                 310                 315                 320

Ser Ile Leu Glu Tyr Pro Ile Glu Pro Ser Gly Val Leu Glu Trp Ile
                325                 330                 335

Glu Met Pro Val Met Pro Asp Ile Ser Ala His
            340                 345
```

<210> 42
<211> 341

<212> PRT
<213> Homo sapiens

<400> 42

```
Met Leu Ser Leu Ser Ser Leu Arg Arg Asn Ser Gly Arg Asn Ser Gly
1               5                  10                  15

Ser Cys Gly Ala Trp Asn Met Val Gly Glu Met Glu Thr Lys Glu Lys
            20                  25                  30

Pro Lys Pro Thr Pro Asp Tyr Leu Met Gln Leu Met Asn Asp Lys Lys
        35                  40                  45

Leu Met Ser Ser Leu Pro Asn Phe Cys Gly Ile Phe Asn His Leu Glu
    50                  55                  60

Arg Leu Leu Asp Glu Glu Ile Ser Arg Val Arg Lys Asp Met Tyr Asn
65                  70                  75                  80

Asp Thr Leu Asn Gly Ser Thr Glu Lys Arg Ser Ala Glu Leu Pro Asp
                85                  90                  95

Ala Val Gly Pro Ile Val Gln Leu Gln Glu Lys Leu Tyr Val Pro Val
            100                 105                 110

Lys Glu Tyr Pro Asp Phe Asn Phe Val Gly Arg Ile Leu Gly Pro Arg
        115                 120                 125

Gly Leu Thr Ala Lys Gln Leu Glu Ala Glu Thr Gly Cys Lys Ile Met
    130                 135                 140

Val Arg Gly Lys Gly Ser Met Arg Asp Lys Lys Lys Glu Glu Gln Asn
145                 150                 155                 160

Arg Gly Lys Pro Asn Trp Glu His Leu Asn Glu Asp Leu His Val Leu
                165                 170                 175

Ile Thr Val Glu Asp Ala Gln Asn Arg Ala Glu Ile Lys Leu Lys Arg
            180                 185                 190

Ala Val Glu Glu Val Lys Lys Leu Leu Val Pro Ala Ala Glu Gly Glu
        195                 200                 205
```

```
Asp Ser Leu Lys Lys Met Gln Leu Met Glu Leu Ala Ile Leu Asn Gly
    210                 215                 220

Thr Tyr Arg Asp Ala Asn Ile Lys Ser Pro Ala Leu Ala Phe Ser Leu
225                 230                 235                 240

Ala Ala Thr Ala Gln Ala Ala Pro Arg Ile Ile Thr Gly Pro Ala Pro
                245                 250                 255

Val Leu Pro Pro Ala Ala Leu Arg Thr Pro Thr Pro Ala Gly Pro Thr
            260                 265                 270

Ile Met Pro Leu Ile Arg Gln Ile Gln Thr Ala Val Met Pro Asn Gly
        275                 280                 285

Thr Pro His Pro Thr Ala Ala Ile Val Pro Pro Gly Pro Glu Ala Gly
    290                 295                 300

Leu Ile Tyr Thr Pro Tyr Glu Tyr Pro Tyr Thr Leu Ala Pro Ala Thr
305                 310                 315                 320

Ser Ile Leu Glu Tyr Pro Ile Glu Pro Ser Gly Val Leu Gly Met Ala
                325                 330                 335

Phe Pro Thr Lys Gly
            340
```

<210> 43
<211> 319
<212> PRT
<213> Homo sapiens

<400> 43

```
Met Val Gly Glu Met Glu Thr Lys Glu Lys Pro Lys Pro Thr Pro Asp
1               5                   10                  15

Tyr Leu Met Gln Leu Met Asn Asp Lys Lys Leu Met Ser Ser Leu Pro
            20                  25                  30

Asn Phe Cys Gly Ile Phe Asn His Leu Glu Arg Leu Leu Asp Glu Glu
        35                  40                  45
```

```
Ile Ser Arg Val Arg Lys Asp Met Tyr Asn Asp Thr Leu Asn Gly Ser
    50                  55                  60

Thr Glu Lys Arg Ser Ala Glu Leu Pro Asp Ala Val Gly Pro Ile Val
65                  70                  75                  80

Gln Leu Gln Glu Lys Leu Tyr Val Pro Val Lys Glu Tyr Pro Asp Phe
                85                  90                  95

Asn Phe Val Gly Arg Ile Leu Gly Pro Arg Gly Leu Thr Ala Lys Gln
            100                 105                 110

Leu Glu Ala Glu Thr Gly Cys Lys Ile Met Val Arg Gly Lys Gly Ser
        115                 120                 125

Met Arg Asp Lys Lys Lys Glu Glu Gln Asn Arg Gly Lys Pro Asn Trp
    130                 135                 140

Glu His Leu Asn Glu Asp Leu His Val Leu Ile Thr Val Glu Asp Ala
145                 150                 155                 160

Gln Asn Arg Ala Glu Ile Lys Leu Lys Arg Ala Val Glu Glu Val Lys
                165                 170                 175

Lys Leu Leu Val Pro Ala Ala Glu Gly Glu Asp Ser Leu Lys Lys Met
            180                 185                 190

Gln Leu Met Glu Leu Ala Ile Leu Asn Gly Thr Tyr Arg Asp Ala Asn
        195                 200                 205

Ile Lys Ser Pro Ala Leu Ala Phe Ser Leu Ala Ala Thr Ala Gln Ala
    210                 215                 220

Ala Pro Arg Ile Ile Thr Gly Pro Ala Pro Val Leu Pro Pro Ala Ala
225                 230                 235                 240

Leu Arg Thr Pro Thr Pro Ala Gly Pro Thr Ile Met Pro Leu Ile Arg
                245                 250                 255

Gln Ile Gln Thr Ala Val Met Pro Asn Gly Thr Pro His Pro Thr Ala
```

260 265 270

Ala Ile Val Pro Pro Gly Pro Glu Ala Gly Leu Ile Tyr Thr Pro Tyr
275 280 285

Glu Tyr Pro Tyr Thr Leu Ala Pro Ala Thr Ser Ile Leu Glu Tyr Pro
290 295 300

Ile Glu Pro Ser Gly Val Leu Gly Lys Phe Phe Ser Pro Trp Gly
305 310 315

<210> 44
<211> 629
<212> PRT
<213> Drosophila melanogaster

<400> 44

Met Ser Met Asp Ala Ser Asn Ser Val Glu Ser Arg Glu Lys Glu Arg
1 5 10 15

Asp Arg Arg Gly Arg Gly Ala Arg Gly Ser Arg Phe Thr Asp Ala Asp
20 25 30

Gly Asn Gly Asn Gly Ala Gly Ser Gln Gly Gly Gly Val Ala Ala Arg
35 40 45

Asp Arg Ser Arg Glu Arg Arg Asn Cys Arg Val Tyr Ile Ser Asn Ile
50 55 60

Pro Tyr Asp Tyr Arg Trp Gln Asp Leu Lys Asp Leu Phe Arg Arg Ile
65 70 75 80

Val Gly Ser Ile Glu Tyr Val Gln Leu Phe Phe Asp Glu Ser Gly Lys
85 90 95

Ala Arg Gly Cys Gly Ile Val Glu Phe Lys Asp Pro Glu Asn Val Gln
100 105 110

Lys Ala Leu Glu Lys Met Asn Arg Tyr Glu Val Asn Gly Arg Glu Leu
115 120 125

Val Val Lys Glu Asp His Gly Glu Gln Arg Asp Gln Tyr Gly Arg Ile

130 135 140

Val Arg Asp Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Val Gln Gly
145 150 155 160

Gly Asn Gly Gly Asn Asn Gly Gly Gly Gly Gly Gly Gly Arg Asp His
165 170 175

Met Asp Asp Arg Asp Arg Gly Phe Ser Arg Arg Asp Asp Asp Arg Leu
180 185 190

Ser Gly Arg Asn Asn Phe Asn Met Met Ser Asn Asp Tyr Asn Asn Ser
195 200 205

Ser Asn Tyr Asn Leu Tyr Gly Leu Ser Ala Ser Phe Leu Glu Ser Leu
210 215 220

Gly Ile Ser Gly Pro Leu His Asn Lys Val Phe Val Ala Asn Leu Asp
225 230 235 240

Tyr Lys Val Asp Asn Lys Lys Leu Lys Gln Val Phe Lys Leu Ala Gly
245 250 255

Lys Val Gln Ser Val Asp Leu Ser Leu Asp Lys Glu Gly Asn Ser Arg
260 265 270

Gly Phe Ala Val Ile Glu Tyr Asp His Pro Val Glu Ala Val Gln Ala
275 280 285

Ile Ser Met Leu Asp Arg Gln Met Leu Phe Asp Arg Arg Met Thr Val
290 295 300

Arg Leu Asp Arg Ile Pro Asp Lys Asn Glu Gly Ile Lys Leu Pro Glu
305 310 315 320

Gly Leu Gly Gly Val Gly Ile Gly Leu Gly Pro Asn Gly Glu Pro Leu
325 330 335

Arg Asp Val Ala His Asn Leu Pro Asn Gly Gly Gln Ser Gln Gly Gln
340 345 350

```
Leu Leu Gly Asn Ala Gln Gln Gly Ser Gln Leu Gly Ser Val Gly Ser
        355                 360                 365

Gln Pro Asn Ser Ser Ala Val Ser Asn Ala Thr Thr Asn Leu Leu Asn
    370                 375                 380

Asn Leu Thr Gly Val Met Phe Gly Asn His Ala Ala Val Gln Pro Ser
385                 390                 395                 400

Pro Val Ala Pro Val Gln Lys Pro Ser Leu Gly Asn Asn Thr Gly Ser
                405                 410                 415

Gly Gly Leu Asn Leu Asn Asn Leu Asn Pro Ser Ile Leu Ala Ala Val
            420                 425                 430

Val Gly Asn Leu Gly Asn Gln Gly Gly Asn Leu Ser Asn Pro Leu Leu
        435                 440                 445

Ser Ser Ser Leu Ser Asn Leu Gly Leu Asn Leu Gly Asn Ser Gly Asn
    450                 455                 460

Asp Asp Asn Leu Pro Pro Ser Asn Val Gly Leu Ser Asn Asn Tyr Ser
465                 470                 475                 480

Ser Gly Gly Thr Gly Gly Gly Asn Ser Tyr Ser Ser Gly Asn Asn Tyr
                485                 490                 495

Ser Gly Gly Gly Gly Ser Ser Asn Leu Gly Tyr Asn Ala Tyr Ser Ser
            500                 505                 510

Ser Gly Gly Met Gly Gly Gly Asn Gly Gly Val Gly Val Asp Gly Asn
        515                 520                 525

Asp Tyr Asn Thr Gly Asn Pro Leu Asp Val Tyr Gly Gly Gly Ser Asn
    530                 535                 540

Val Gly Asn Ser Asn Val Gly Ser Ala Asn Ala Val Gly Ala Ser Arg
545                 550                 555                 560

Lys Ser Asp Thr Ile Ile Ile Lys Asn Val Pro Ile Thr Cys Thr Trp
                565                 570                 575
```

Gln Thr Leu Arg Asp Lys Phe Arg Glu Ile Gly Asp Val Lys Phe Ala
580 585 590

Glu Ile Arg Gly Asn Asp Val Gly Val Val Arg Phe Phe Lys Glu Arg
595 600 605

Asp Ala Glu Leu Ala Ile Ala Leu Met Asp Gly Ser Arg Leu Asp Gly
610 615 620

Arg Asn Ile Lys Val
625

<210> 45
<211> 543
<212> PRT
<213> Homo sapiens

<400> 45

Val Lys Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys Ser Asp Leu
1 5 10 15

Lys Glu Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe His Pro Tyr
20 25 30

Ser Lys Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly Pro Asn Arg
35 40 45

Asn Arg Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys Trp Gln Ala
50 55 60

Ile Lys Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr Tyr Val Glu
65 70 75 80

Leu Phe Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly Val Val Glu
85 90 95

Phe Lys Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys
100 105 110

Tyr Asp Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp Pro Asp Gly
115 120 125

Glu Asn Ala Arg Arg Ala Leu Gln Arg Thr Gly Gly Ser Phe Pro Gly
130 135 140

Gly His Val Pro Asp Met Gly Ser Gly Leu Met Asn Leu Pro Pro Ser
145 150 155 160

Ile Leu Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln
165 170 175

Ala Gly Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys
180 185 190

Val Gly Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val
195 200 205

Lys Arg Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met
210 215 220

Gly Thr Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser
225 230 235 240

Met Phe Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met
245 250 255

Asp Asp Lys Ser Val Pro His Glu Glu Tyr Arg Ser His Asp Gly Lys
260 265 270

Thr Pro Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly
275 280 285

Pro Gly Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val
290 295 300

Met Gly Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe
305 310 315 320

Gly Gly Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu
325 330 335

Ala Met Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu
340 345 350

```
Leu Tyr Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg
        355                 360                 365

Gly Asp Ile Gly Ile Asn Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu
    370                 375                 380

Gly Ser Ala Met Ile Gly Gly Phe Ala Gly Arg Ile Gly Ser Ser Asn
385                 390                 395                 400

Met Gly Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn
                405                 410                 415

Ser Val Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser
            420                 425                 430

Phe Asp Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile
        435                 440                 445

Asp Met Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg
    450                 455                 460

Glu Arg Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro
465                 470                 475                 480

Phe Asp Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly
                485                 490                 495

His Val Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly
            500                 505                 510

Cys Gly Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys
        515                 520                 525

Arg Ile Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val
    530                 535                 540
```

<210> 46
<211> 114
<212> PRT
<213> Drosophila melanogaster

<400> 46

Gly Arg Gly Ala Arg Gly Ser Arg Phe Thr Asp Ala Asp Gly Asn Gly
1 5 10 15

Asn Gly Ala Gly Ser Gln Gly Gly Gly Val Ala Ala Arg Asp Arg Ser
20 25 30

Arg Glu Arg Arg Asn Cys Arg Val Tyr Ile Ser Asn Ile Pro Tyr Asp
35 40 45

Tyr Arg Trp Gln Asp Leu Lys Asp Leu Phe Arg Arg Ile Val Gly Ser
50 55 60

Ile Glu Tyr Val Gln Leu Phe Phe Asp Glu Ser Gly Lys Ala Arg Gly
65 70 75 80

Cys Gly Ile Val Glu Phe Lys Asp Pro Glu Asn Val Gln Lys Ala Leu
85 90 95

Glu Lys Met Asn Arg Tyr Glu Val Asn Gly Arg Glu Leu Val Val Lys
100 105 110

Glu Asp

<210> 47
<211> 108
<212> PRT
<213> Homo sapiens

<400> 47

Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe
1 5 10 15

Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys
20 25 30

Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln
35 40 45

Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu
50 55 60

```
Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe
65                  70                  75                  80

Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile
                85                  90                  95

Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
            100                 105
```

<210> 48
<211> 170
<212> PRT
<213> Drosophila melanogaster

<400> 48

```
Asp Gln Tyr Gly Arg Ile Val Arg Asp Gly Gly Gly Gly Gly Gly Gly
1               5                   10                  15

Gly Gly Gly Val Gln Gly Gly Asn Gly Gly Asn Asn Gly Gly Gly Gly
            20                  25                  30

Gly Gly Gly Arg Asp His Met Asp Asp Arg Asp Arg Gly Phe Ser Arg
        35                  40                  45

Arg Asp Asp Asp Arg Leu Ser Gly Arg Asn Asn Phe Asn Met Met Ser
    50                  55                  60

Asn Asp Tyr Asn Asn Ser Ser Asn Tyr Asn Leu Tyr Gly Leu Ser Ala
65                  70                  75                  80

Ser Phe Leu Glu Ser Leu Gly Ile Ser Gly Pro Leu His Asn Lys Val
                85                  90                  95

Phe Val Ala Asn Leu Asp Tyr Lys Val Asp Asn Lys Lys Leu Lys Gln
            100                 105                 110

Val Phe Lys Leu Ala Gly Lys Val Gln Ser Val Asp Leu Ser Leu Asp
        115                 120                 125

Lys Glu Gly Asn Ser Arg Gly Phe Ala Val Ile Glu Tyr Asp His Pro
    130                 135                 140
```

```
Val Glu Ala Val Gln Ala Ile Ser Met Leu Asp Arg Gln Met Leu Phe
145                 150                 155                 160

Asp Arg Arg Met Thr Val Arg Leu Asp Arg
                165                 170
```

<210> 49
<211> 169
<212> PRT
<213> Homo sapiens

<400> 49

```
Asp Ser Phe Gly Arg Leu Gly Ser Ala Met Ile Gly Gly Phe Ala Gly
1               5                   10                  15

Arg Ile Gly Ser Ser Asn Met Gly Pro Val Gly Ser Gly Ile Ser Gly
            20                  25                  30

Gly Met Gly Ser Met Asn Ser Val Thr Gly Gly Met Gly Met Gly Leu
        35                  40                  45

Asp Arg Met Ser Ser Ser Phe Asp Arg Met Gly Pro Gly Ile Gly Ala
    50                  55                  60

Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe Leu Ser Gly Pro
65                  70                  75                  80

Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys Gly Asn Gln Ile
                85                  90                  95

Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln Lys Leu Lys Glu
            100                 105                 110

Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu Ile Lys Met Glu
        115                 120                 125

Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe Asp Ser Pro Glu
    130                 135                 140

Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile Lys Ile Ser Gly
145                 150                 155                 160
```

Arg Glu Ile Asp Val Arg Leu Asp Arg
165

<210> 50
<211> 519
<212> PRT
<213> Homo sapiens

<400> 50

Val Lys Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys Ser Asp Leu
1 5 10 15

Lys Glu Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe His Pro Tyr
20 25 30

Ser Lys Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly Pro Asn Arg
35 40 45

Asn Arg Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys Trp Gln Ala
50 55 60

Ile Lys Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr Tyr Val Glu
65 70 75 80

Leu Phe Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly Val Val Glu
85 90 95

Phe Lys Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys
100 105 110

Tyr Asp Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp Pro Asp Gly
115 120 125

Glu Asn Ala Arg Arg Ala Ser Gln Arg Thr Gly Gly Ser Phe Pro Gly
130 135 140

Gly His Val Pro Asp Met Gly Ser Gly Leu Met Asn Leu Pro Pro Ser
145 150 155 160

Ile Leu Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln
165 170 175

```
Ala Gly Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys
            180                 185                 190

Val Gly Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val
        195                 200                 205

Lys Arg Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met
    210                 215                 220

Gly Thr Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser
225                 230                 235                 240

Met Phe Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met
                245                 250                 255

Asp Asp Lys Ser Val Pro His Glu Glu Tyr Arg Ser His Asp Gly Lys
            260                 265                 270

Thr Pro Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly
        275                 280                 285

Pro Gly Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val
    290                 295                 300

Met Gly Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe
305                 310                 315                 320

Gly Gly Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu
                325                 330                 335

Ala Met Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu
            340                 345                 350

Leu Tyr Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg
        355                 360                 365

Gly Asp Ile Gly Ile Asn Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu
    370                 375                 380

Gly Gly Gly Met Gly Gly Met Asn Ser Val Thr Gly Gly Met Gly Met
```

385 390 395 400

Gly Leu Asp Arg Met Ser Ser Ser Phe Asp Arg Met Gly Pro Gly Ile
405 410 415

Gly Ala Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe Leu Ser
420 425 430

Gly Pro Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys Gly Asn
435 440 445

Gln Ile Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln Lys Leu
450 455 460

Lys Glu Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu Ile Lys
465 470 475 480

Met Glu Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe Asp Ser
485 490 495

Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile Lys Ile
500 505 510

Ser Gly Arg Glu Ile Asp Val
515

<210> 51
<211> 255
<212> PRT
<213> Drosophila melanogaster

<400> 51

Arg Arg Asn Cys Arg Val Tyr Ile Ser Asn Ile Pro Tyr Asp Tyr Arg
1 5 10 15

Trp Gln Asp Leu Lys Asp Leu Phe Arg Arg Ile Val Gly Ser Ile Glu
20 25 30

Tyr Val Gln Leu Phe Phe Asp Glu Ser Gly Lys Ala Arg Gly Cys Gly
35 40 45

Ile Val Glu Phe Lys Asp Pro Glu Asn Val Gln Lys Ala Leu Glu Lys

```
    50                  55                  60

Met Asn Arg Tyr Glu Val Asn Gly Arg Glu Leu Val Val Lys Glu Asp
65                  70                  75                  80

His Gly Glu Gln Arg Asp Gln Tyr Gly Arg Ile Val Arg Asp Gly Gly
                85                  90                  95

Gly Gly Gly Gly Gly Gly Gly Gly Val Gln Gly Gly Asn Gly Gly Asn
            100                 105                 110

Asn Gly Gly Gly Gly Gly Gly Gly Arg Asp His Met Asp Asp Arg Asp
        115                 120                 125

Arg Gly Phe Ser Arg Arg Asp Asp Asp Arg Leu Ser Gly Arg Asn Asn
    130                 135                 140

Phe Asn Met Met Ser Asn Asp Tyr Asn Asn Ser Ser Asn Tyr Asn Leu
145                 150                 155                 160

Tyr Gly Leu Ser Ala Ser Phe Leu Glu Ser Leu Gly Ile Ser Gly Pro
                165                 170                 175

Leu His Asn Lys Val Phe Val Ala Asn Leu Asp Tyr Lys Val Asp Asn
            180                 185                 190

Lys Lys Leu Lys Gln Val Phe Lys Leu Ala Gly Lys Val Gln Ser Val
        195                 200                 205

Asp Leu Ser Leu Asp Lys Glu Gly Asn Ser Arg Gly Phe Ala Val Ile
    210                 215                 220

Glu Tyr Asp His Pro Val Glu Ala Val Gln Ala Ile Ser Met Leu Asp
225                 230                 235                 240

Arg Gln Met Leu Phe Asp Arg Arg Met Thr Val Arg Leu Asp Arg
                245                 250                 255
```

<210> 52
<211> 345
<212> PRT
<213> Homo sapiens

<400> 52

```
Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val Gly
1               5                  10                  15

Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys Arg
            20                  25                  30

Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly Thr
        35                  40                  45

Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met Phe
    50                  55                  60

Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp Asp
65                  70                  75                  80

Lys Ser Val Pro His Glu Glu Tyr Arg Ser His Asp Gly Lys Thr Pro
                85                  90                  95

Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro Gly
            100                 105                 110

Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val Met Gly
        115                 120                 125

Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe Gly Gly
    130                 135                 140

Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu Ala Met
145                 150                 155                 160

Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr
                165                 170                 175

Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg Gly Asp
            180                 185                 190

Ile Gly Ile Asn Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu Gly Gly
        195                 200                 205
```

```
Gly Met Gly Gly Met Asn Ser Val Thr Gly Gly Met Gly Met Gly Leu
    210                 215                 220

Asp Arg Met Ser Ser Ser Phe Asp Arg Met Gly Pro Gly Ile Gly Ala
225                 230                 235                 240

Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe Leu Ser Gly Pro
                245                 250                 255

Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys Gly Asn Gln Ile
            260                 265                 270

Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln Lys Leu Lys Glu
        275                 280                 285

Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu Ile Lys Met Glu
    290                 295                 300

Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe Asp Ser Pro Glu
305                 310                 315                 320

Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile Lys Ile Ser Gly
                325                 330                 335

Arg Glu Ile Asp Val Arg Leu Asp Arg
            340                 345
```

<210> 53
<211> 108
<212> PRT
<213> Homo sapiens

<400> 53

```
Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe
1               5                   10                  15

Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys
            20                  25                  30

Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln
        35                  40                  45
```

Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu
50 55 60

Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe
65 70 75 80

Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile
85 90 95

Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
100 105

<210> 54
<211> 627
<212> PRT
<213> Drosophila melanogaster

<400> 54

Met Asp Ala Ser Asn Ser Val Glu Ser Arg Glu Lys Glu Arg Asp Arg
1 5 10 15

Arg Gly Arg Gly Ala Arg Gly Ser Arg Phe Thr Asp Ala Asp Gly Asn
20 25 30

Gly Asn Gly Ala Gly Ser Gln Gly Gly Gly Val Ala Ala Arg Asp Arg
35 40 45

Ser Arg Glu Arg Arg Asn Cys Arg Val Tyr Ile Ser Asn Ile Pro Tyr
50 55 60

Asp Tyr Arg Trp Gln Asp Leu Lys Asp Leu Phe Arg Arg Ile Val Gly
65 70 75 80

Ser Ile Glu Tyr Val Gln Leu Phe Phe Asp Glu Ser Gly Lys Ala Arg
85 90 95

Gly Cys Gly Ile Val Glu Phe Lys Asp Pro Glu Asn Val Gln Lys Ala
100 105 110

Leu Glu Lys Met Asn Arg Tyr Glu Val Asn Gly Arg Glu Leu Val Val
115 120 125

Lys Glu Asp His Gly Glu Gln Arg Asp Gln Tyr Gly Arg Ile Val Arg
130 135 140

Asp Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Val Gln Gly Gly Asn
145 150 155 160

Gly Gly Asn Asn Gly Gly Gly Gly Gly Gly Gly Arg Asp His Met Asp
165 170 175

Asp Arg Asp Arg Gly Phe Ser Arg Arg Asp Asp Asp Arg Leu Ser Gly
180 185 190

Arg Asn Asn Phe Asn Met Met Ser Asn Asp Tyr Asn Asn Ser Ser Asn
195 200 205

Tyr Asn Leu Tyr Gly Leu Ser Ala Ser Phe Leu Glu Ser Leu Gly Ile
210 215 220

Ser Gly Pro Leu His Asn Lys Val Phe Val Ala Asn Leu Asp Tyr Lys
225 230 235 240

Val Asp Asn Lys Lys Leu Lys Gln Val Phe Lys Leu Ala Gly Lys Val
245 250 255

Gln Ser Val Asp Leu Ser Leu Asp Lys Glu Gly Asn Ser Arg Gly Phe
260 265 270

Ala Val Ile Glu Tyr Asp His Pro Val Glu Ala Val Gln Ala Ile Ser
275 280 285

Met Leu Asp Arg Gln Met Leu Phe Asp Arg Arg Met Thr Val Arg Leu
290 295 300

Asp Arg Ile Pro Asp Lys Asn Glu Gly Ile Lys Leu Pro Glu Gly Leu
305 310 315 320

Gly Gly Val Gly Ile Gly Leu Gly Pro Asn Gly Glu Pro Leu Arg Asp
325 330 335

Val Ala His Asn Leu Pro Asn Gly Gly Gln Ser Gln Gly Gln Leu Leu
340 345 350

Gly Asn Ala Gln Gln Gly Ser Gln Leu Gly Ser Val Gly Ser Gln Pro
355 360 365

Asn Ser Ser Ala Val Ser Asn Ala Thr Thr Asn Leu Leu Asn Asn Leu
370 375 380

Thr Gly Val Met Phe Gly Asn His Ala Ala Val Gln Pro Ser Pro Val
385 390 395 400

Ala Pro Val Gln Lys Pro Ser Leu Gly Asn Asn Thr Gly Ser Gly Gly
405 410 415

Leu Asn Leu Asn Asn Leu Asn Pro Ser Ile Leu Ala Ala Val Val Gly
420 425 430

Asn Leu Gly Asn Gln Gly Gly Asn Leu Ser Asn Pro Leu Leu Ser Ser
435 440 445

Ser Leu Ser Asn Leu Gly Leu Asn Leu Gly Asn Ser Gly Asn Asp Asp
450 455 460

Asn Leu Pro Pro Ser Asn Val Gly Leu Ser Asn Asn Tyr Ser Ser Gly
465 470 475 480

Gly Thr Gly Gly Gly Asn Ser Tyr Ser Ser Gly Asn Asn Tyr Ser Gly
485 490 495

Gly Gly Gly Ser Ser Asn Leu Gly Tyr Asn Ala Tyr Ser Ser Ser Gly
500 505 510

Gly Met Gly Gly Gly Asn Gly Gly Val Gly Val Asp Gly Asn Asp Tyr
515 520 525

Asn Thr Gly Asn Pro Leu Asp Val Tyr Gly Gly Gly Ser Asn Val Gly
530 535 540

Asn Ser Asn Val Gly Ser Ala Asn Ala Val Gly Ala Ser Arg Lys Ser
545 550 555 560

Asp Thr Ile Ile Ile Lys Asn Val Pro Ile Thr Cys Thr Trp Gln Thr
565 570 575

Leu Arg Asp Lys Phe Arg Glu Ile Gly Asp Val Lys Phe Ala Glu Ile
580 585 590

Arg Gly Asn Asp Val Gly Val Val Arg Phe Phe Lys Glu Arg Asp Ala
595 600 605

Glu Leu Ala Ile Ala Leu Met Asp Gly Ser Arg Leu Asp Gly Arg Asn
610 615 620

Ile Lys Val
625

<210> 55
<211> 541
<212> PRT
<213> Homo sapiens

<400> 55

Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys Ser Asp Leu Lys Glu
1 5 10 15

Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe His Pro Tyr Ser Lys
20 25 30

Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly Pro Asn Arg Asn Arg
35 40 45

Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys Trp Gln Ala Ile Lys
50 55 60

Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr Tyr Val Glu Leu Phe
65 70 75 80

Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly Val Val Glu Phe Lys
85 90 95

Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys Tyr Asp
100 105 110

Leu Ser Gly Arg Arg Val Asn Ile Lys Glu Asp Pro Asp Gly Glu Asn
115 120 125

```
Ala Arg Arg Ala Leu Gln Arg Thr Gly Thr Ser Phe Gln Gly Ser His
    130                 135                 140

Ala Ser Asp Val Gly Ser Gly Leu Val Asn Leu Pro Pro Ser Ile Leu
145                 150                 155                 160

Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln Ala Gly
                165                 170                 175

Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val Gly
            180                 185                 190

Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys Ala
        195                 200                 205

Gly Ser Tyr Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly Thr
    210                 215                 220

Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met Phe
225                 230                 235                 240

Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp Asp
                245                 250                 255

Lys Ser Val Pro His Glu Glu Tyr Arg Ser Pro Asp Gly Lys Thr Pro
            260                 265                 270

Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro Gly
        275                 280                 285

Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val Met Gly
    290                 295                 300

Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe Gly Gly
305                 310                 315                 320

Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu Ala Met
                325                 330                 335

Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr
```

340 345 350

Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly His Arg Asp
355 360 365

Ile Gly Leu Ser Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser
370 375 380

Ala Met Ile Gly Gly Ile Thr Gly Arg Ile Gly Ser Ser Asn Met Gly
385 390 395 400

Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn Ser Val
405 410 415

Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp
420 425 430

Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met
435 440 445

Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg
450 455 460

Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp
465 470 475 480

Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val
485 490 495

Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly
500 505 510

Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile
515 520 525

Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val
530 535 540

<210> 56
<211> 108
<212> PRT
<213> Homo sapiens

<400> 56

Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe
1 5 10 15

Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys
20 25 30

Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln
35 40 45

Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu
50 55 60

Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe
65 70 75 80

Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile
85 90 95

Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
100 105

<210> 57
<211> 157
<212> PRT
<213> Drosophila melanogaster

<400> 57

Gly Gly Gly Gly Gly Gly Val Gln Gly Gly Asn Gly Gly Asn Asn Gly
1 5 10 15

Gly Gly Gly Gly Gly Gly Arg Asp His Met Asp Asp Arg Asp Arg Gly
20 25 30

Phe Ser Arg Arg Asp Asp Asp Arg Leu Ser Gly Arg Asn Asn Phe Asn
35 40 45

Met Met Ser Asn Asp Tyr Asn Asn Ser Ser Asn Tyr Asn Leu Tyr Gly
50 55 60

Leu Ser Ala Ser Phe Leu Glu Ser Leu Gly Ile Ser Gly Pro Leu His

65 70 75 80

Asn Lys Val Phe Val Ala Asn Leu Asp Tyr Lys Val Asp Asn Lys Lys
85 90 95

Leu Lys Gln Val Phe Lys Leu Ala Gly Lys Val Gln Ser Val Asp Leu
100 105 110

Ser Leu Asp Lys Glu Gly Asn Ser Arg Gly Phe Ala Val Ile Glu Tyr
115 120 125

Asp His Pro Val Glu Ala Val Gln Ala Ile Ser Met Leu Asp Arg Gln
130 135 140

Met Leu Phe Asp Arg Arg Met Thr Val Arg Leu Asp Arg
145 150 155

<210> 58
<211> 146
<212> PRT
<213> Homo sapiens

<400> 58

Gly Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn Ser
1 5 10 15

Val Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe
20 25 30

Asp Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp
35 40 45

Met Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu
50 55 60

Arg Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe
65 70 75 80

Asp Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His
85 90 95

Val Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys

100 105 110

Gly Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg
115 120 125

Ile Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu
130 135 140

Asp Arg
145

<210> 59
<211> 632
<212> PRT
<213> Drosophila melanogaster

<400> 59

Met Ser Met Asp Ala Ser Asn Ser Val Glu Ser Arg Glu Lys Glu Arg
1 5 10 15

Asp Arg Arg Gly Arg Gly Ala Arg Gly Ser Arg Phe Thr Asp Ala Asp
20 25 30

Gly Asn Gly Asn Gly Ala Gly Ser Gln Gly Gly Gly Val Ala Ala Arg
35 40 45

Asp Arg Ser Arg Glu Arg Arg Asn Cys Arg Val Tyr Ile Ser Asn Ile
50 55 60

Pro Tyr Asp Tyr Arg Trp Gln Asp Leu Lys Asp Leu Phe Arg Arg Ile
65 70 75 80

Val Gly Ser Ile Glu Tyr Val Gln Leu Phe Phe Asp Glu Ser Gly Lys
85 90 95

Ala Arg Gly Cys Gly Ile Val Glu Phe Lys Asp Pro Glu Asn Val Gln
100 105 110

Lys Ala Leu Glu Lys Met Asn Arg Tyr Glu Val Asn Gly Arg Glu Leu
115 120 125

Val Val Lys Glu Asp His Gly Glu Gln Arg Asp Gln Tyr Gly Arg Ile

130 135 140

Val Arg Asp Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Val Gln Gly
145 150 155 160

Gly Asn Gly Gly Asn Asn Gly Gly Gly Gly Gly Gly Gly Arg Asp His
165 170 175

Met Asp Asp Arg Asp Arg Gly Phe Ser Arg Arg Asp Asp Asp Arg Leu
180 185 190

Ser Gly Arg Asn Asn Phe Asn Met Met Ser Asn Asp Tyr Asn Asn Ser
195 200 205

Ser Asn Tyr Asn Leu Tyr Gly Leu Ser Ala Ser Phe Leu Glu Ser Leu
210 215 220

Gly Ile Ser Gly Pro Leu His Asn Lys Val Phe Val Ala Asn Leu Asp
225 230 235 240

Tyr Lys Val Asp Asn Lys Lys Leu Lys Gln Val Phe Lys Leu Ala Gly
245 250 255

Lys Val Gln Ser Val Asp Leu Ser Leu Asp Lys Glu Gly Asn Ser Arg
260 265 270

Gly Phe Ala Val Ile Glu Tyr Asp His Pro Val Glu Ala Val Gln Ala
275 280 285

Ile Ser Met Leu Asp Arg Gln Met Leu Phe Asp Arg Arg Met Thr Val
290 295 300

Arg Leu Asp Arg Ile Pro Asp Lys Asn Glu Gly Ile Lys Leu Pro Glu
305 310 315 320

Gly Leu Gly Gly Val Gly Ile Gly Leu Gly Pro Asn Gly Glu Pro Leu
325 330 335

Arg Asp Val Ala His Asn Leu Pro Asn Gly Gly Gln Ser Gln Gly Gln
340 345 350

```
Leu Leu Gly Asn Ala Gln Gln Gly Ser Gln Leu Gly Ser Val Gly Ser
        355                 360                 365

Gln Pro Asn Ser Ser Ala Val Ser Asn Ala Thr Thr Asn Leu Leu Asn
    370                 375                 380

Asn Leu Thr Gly Val Met Phe Gly Asn His Ala Ala Val Gln Pro Ser
385                 390                 395                 400

Pro Val Ala Pro Val Gln Lys Pro Ser Leu Gly Asn Asn Thr Gly Ser
                405                 410                 415

Gly Gly Leu Asn Leu Asn Asn Leu Asn Pro Ser Ile Leu Ala Ala Val
            420                 425                 430

Val Gly Asn Leu Gly Asn Gln Gly Gly Asn Leu Ser Asn Pro Leu Leu
        435                 440                 445

Ser Ser Ser Leu Ser Asn Leu Gly Leu Asn Leu Gly Asn Ser Gly Asn
    450                 455                 460

Asp Asp Asn Leu Pro Pro Ser Asn Val Gly Leu Ser Asn Asn Tyr Ser
465                 470                 475                 480

Ser Gly Gly Thr Gly Gly Gly Asn Ser Tyr Ser Ser Gly Asn Asn Tyr
                485                 490                 495

Ser Gly Gly Gly Gly Ser Ser Asn Leu Gly Tyr Asn Ala Tyr Ser Ser
            500                 505                 510

Ser Gly Gly Met Gly Gly Gly Asn Gly Gly Val Gly Val Asp Gly Asn
        515                 520                 525

Asp Tyr Asn Thr Gly Asn Pro Leu Asp Val Tyr Gly Gly Gly Ser Asn
    530                 535                 540

Val Gly Asn Ser Asn Val Gly Ser Ala Asn Ala Val Gly Ala Ser Arg
545                 550                 555                 560

Lys Ser Asp Thr Ile Ile Ile Lys Asn Val Pro Ile Thr Cys Thr Trp
                565                 570                 575
```

```
Gln Thr Leu Arg Asp Lys Phe Arg Glu Ile Gly Asp Val Lys Phe Ala
            580                 585                 590

Glu Ile Arg Gly Asn Asp Val Gly Val Val Arg Phe Phe Lys Glu Arg
        595                 600                 605

Asp Ala Glu Leu Ala Ile Ala Leu Met Asp Gly Ser Arg Leu Asp Gly
    610                 615                 620

Arg Asn Ile Lys Val Thr Tyr Phe
625                 630
```

<210> 60
<211> 620
<212> PRT
<213> Homo sapiens

<400> 60

```
Pro Leu Ser Arg Ser Glu Pro Leu Ser Ser Gly Gly Arg Gly Gly Gly
1               5                   10                  15

Ser Gly Gly Gly Met Ala Asp Ala Asn Lys Ala Glu Val Pro Gly Ala
            20                  25                  30

Thr Gly Gly Asp Ser Pro His Leu Gln Pro Ala Glu Pro Pro Gly Glu
        35                  40                  45

Pro Arg Arg Glu Pro His Pro Ala Glu Ala Glu Lys Gln Gln Pro Gln
    50                  55                  60

His Ser Ser Ser Ser Asn Gly Val Lys Met Glu Asn Asp Glu Ser Ala
65                  70                  75                  80

Lys Glu Glu Lys Ser Asp Leu Lys Glu Lys Ser Thr Gly Ser Lys Lys
                85                  90                  95

Ala Asn Arg Phe His Pro Tyr Ser Lys Asp Lys Asn Ser Gly Thr Gly
            100                 105                 110

Glu Lys Lys Gly Pro Asn Arg Asn Arg Val Phe Ile Ser Asn Ile Pro
        115                 120                 125
```

```
Tyr Asp Met Lys Trp Gln Ala Ile Lys Asp Leu Met Arg Glu Lys Val
    130                 135                 140

Gly Glu Val Thr Tyr Val Glu Leu Phe Lys Asp Ala Glu Gly Lys Ser
145                 150                 155                 160

Arg Gly Cys Gly Val Val Glu Phe Lys Asp Glu Glu Phe Val Lys Lys
                165                 170                 175

Ala Leu Glu Thr Met Asn Lys Tyr Asp Leu Ser Gly Arg Pro Leu Asn
            180                 185                 190

Ile Lys Glu Asp Pro Asp Gly Glu Asn Ala Arg Arg Ala Leu Gln Arg
        195                 200                 205

Thr Gly Gly Ser Phe Pro Gly Gly His Val Pro Asp Met Gly Ser Gly
    210                 215                 220

Leu Met Asn Leu Pro Pro Ser Ile Leu Asn Asn Pro Asn Ile Pro Pro
225                 230                 235                 240

Glu Val Ile Ser Asn Leu Gln Ala Gly Arg Leu Gly Ser Thr Ile Phe
                245                 250                 255

Val Ala Asn Leu Asp Phe Lys Val Gly Trp Lys Lys Leu Lys Glu Val
            260                 265                 270

Phe Ser Ile Ala Gly Thr Val Lys Arg Ala Asp Ile Lys Glu Asp Lys
        275                 280                 285

Asp Gly Lys Ser Arg Gly Met Gly Thr Val Thr Phe Glu Gln Ala Ile
    290                 295                 300

Glu Ala Val Gln Ala Ile Ser Met Phe Asn Gly Gln Phe Leu Phe Asp
305                 310                 315                 320

Arg Pro Met His Val Lys Met Asp Asp Lys Ser Val Pro His Glu Glu
                325                 330                 335

Tyr Arg Ser His Asp Gly Lys Thr Pro Gln Leu Pro Arg Gly Leu Gly
            340                 345                 350
```

Gly Ile Gly Met Gly Leu Gly Pro Gly Gly Gln Pro Ile Ser Ala Ser
355 360 365

Gln Leu Asn Ile Gly Gly Val Met Gly Asn Leu Gly Pro Gly Gly Met
370 375 380

Gly Met Asp Gly Pro Gly Phe Gly Gly Met Asn Arg Ile Gly Gly Gly
385 390 395 400

Ile Gly Phe Gly Gly Leu Glu Ala Met Asn Ser Met Gly Gly Phe Gly
405 410 415

Gly Val Gly Arg Met Gly Glu Leu Tyr Arg Gly Ala Met Thr Ser Ser
420 425 430

Met Glu Arg Asp Phe Gly Arg Gly Asp Ile Gly Ile Asn Arg Gly Phe
435 440 445

Gly Asp Ser Phe Gly Arg Leu Gly Ser Ala Met Ile Gly Gly Phe Ala
450 455 460

Gly Arg Ile Gly Ser Ser Asn Met Gly Pro Val Gly Ser Gly Ile Ser
465 470 475 480

Gly Gly Met Gly Ser Met Asn Ser Val Thr Gly Gly Met Gly Met Gly
485 490 495

Leu Asp Arg Met Ser Ser Ser Phe Asp Arg Met Gly Pro Gly Ile Gly
500 505 510

Ala Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly Phe Leu Ser Gly
515 520 525

Pro Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser Lys Gly Asn Gln
530 535 540

Ile Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp Gln Lys Leu Lys
545 550 555 560

Glu Lys Phe Ser Gln Cys Gly His Val Met Phe Ala Glu Ile Lys Met

565 570 575

Glu Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg Phe Asp Ser Pro
580 585 590

Glu Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly Ile Lys Ile Ser
595 600 605

Gly Arg Glu Ile Asp Val Arg Leu Asp Arg Asn Ala
610 615 620

<210> 61
<211> 547
<212> PRT
<213> Homo sapiens

<400> 61

Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys Ser Asp Leu Lys Glu
1 5 10 15

Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe His Pro Tyr Ser Lys
20 25 30

Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly Pro Asn Arg Asn Arg
35 40 45

Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys Trp Gln Ala Ile Lys
50 55 60

Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr Tyr Val Glu Leu Phe
65 70 75 80

Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly Val Val Glu Phe Lys
85 90 95

Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys Tyr Asp
100 105 110

Leu Ser Gly Arg Arg Val Asn Ile Lys Glu Asp Pro Asp Gly Glu Asn
115 120 125

Ala Arg Arg Ala Leu Gln Arg Thr Gly Thr Ser Phe Gln Gly Ser His

130 135 140

Ala Ser Asp Val Gly Ser Gly Leu Val Asn Leu Pro Pro Ser Ile Leu
145 150 155 160

Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln Ala Gly
165 170 175

Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val Gly
180 185 190

Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys Ala
195 200 205

Gly Ser Tyr Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly Thr
210 215 220

Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met Phe
225 230 235 240

Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp Asp
245 250 255

Lys Ser Val Pro His Glu Glu Tyr Arg Ser Pro Asp Gly Lys Thr Pro
260 265 270

Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro Gly
275 280 285

Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val Met Gly
290 295 300

Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe Gly Gly
305 310 315 320

Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu Ala Met
325 330 335

Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr
340 345 350

```
Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly His Arg Asp
        355                 360                 365

Ile Gly Leu Ser Arg Gly Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser
    370                 375                 380

Ala Met Ile Gly Gly Ile Thr Gly Arg Ile Gly Ser Ser Asn Met Gly
385                 390                 395                 400

Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn Ser Val
                405                 410                 415

Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp
            420                 425                 430

Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met
        435                 440                 445

Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg
    450                 455                 460

Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp
465                 470                 475                 480

Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val
                485                 490                 495

Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly
            500                 505                 510

Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile
        515                 520                 525

Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
    530                 535                 540

Arg Asn Ala
545
```

<210> 62
<211> 576
<212> PRT

<213> Homo sapiens

<400> 62

```
Met Ala Asp Ala Asn Lys Ala Glu Val Pro Gly Ala Thr Gly Gly Asp
1               5                  10                  15

Ser Pro His Leu Gln Pro Ala Glu Pro Pro Gly Glu Pro Arg Arg Glu
            20                  25                  30

Pro His Pro Ala Glu Ala Glu Lys Gln Gln Pro Gln His Ser Ser Ser
        35                  40                  45

Ser Asn Gly Val Lys Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys
    50                  55                  60

Ser Asp Leu Lys Glu Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe
65                  70                  75                  80

His Pro Tyr Ser Lys Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly
                85                  90                  95

Pro Asn Arg Asn Arg Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys
            100                 105                 110

Trp Gln Ala Ile Lys Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr
        115                 120                 125

Tyr Val Glu Leu Phe Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly
    130                 135                 140

Val Val Glu Phe Lys Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr
145                 150                 155                 160

Met Asn Lys Tyr Asp Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp
                165                 170                 175

Pro Asp Gly Glu Asn Ala Arg Arg Ala Ser Gln Arg Thr Gly Gly Ser
            180                 185                 190

Phe Pro Gly Gly His Val Pro Asp Met Gly Ser Gly Leu Met Asn Leu
        195                 200                 205
```

```
Pro Pro Ser Ile Leu Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser
    210                 215                 220

Asn Leu Gln Ala Gly Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu
225                 230                 235                 240

Asp Phe Lys Val Gly Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala
                245                 250                 255

Gly Thr Val Lys Arg Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser
            260                 265                 270

Arg Gly Met Gly Thr Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln
        275                 280                 285

Ala Ile Ser Met Phe Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His
    290                 295                 300

Val Lys Met Asp Asp Lys Ser Val Pro His Glu Glu Tyr Arg Ser His
305                 310                 315                 320

Asp Gly Lys Thr Pro Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met
                325                 330                 335

Gly Leu Gly Pro Gly Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile
            340                 345                 350

Gly Gly Val Met Gly Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly
        355                 360                 365

Pro Gly Phe Gly Gly Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly
    370                 375                 380

Gly Leu Glu Ala Met Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg
385                 390                 395                 400

Met Gly Glu Leu Tyr Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp
                405                 410                 415

Phe Gly Arg Gly Asp Ile Gly Ile Asn Arg Gly Phe Gly Asp Ser Phe
            420                 425                 430
```

```
Gly Arg Leu Gly Gly Gly Met Gly Gly Met Asn Ser Val Thr Gly Gly
        435                 440                 445

Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp Arg Met Gly
    450                 455                 460

Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met Asp Arg Gly
465                 470                 475                 480

Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg Ile Gly Ser
                485                 490                 495

Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp Leu Thr Trp
            500                 505                 510

Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val Met Phe Ala
        515                 520                 525

Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly Thr Val Arg
    530                 535                 540

Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile Met Asn Gly
545                 550                 555                 560

Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp Arg Asn Ala
                565                 570                 575
```

<210> 63
<211> 196
<212> PRT
<213> Homo sapiens

<400> 63

```
Met Asn Asn Gly Gly Lys Ala Glu Lys Glu Asn Thr Pro Ser Glu Ala
1               5                   10                  15

Asn Leu Gln Glu Glu Glu Val Arg Thr Leu Phe Val Ser Gly Leu Pro
            20                  25                  30

Leu Asp Ile Lys Pro Arg Glu Leu Tyr Leu Leu Phe Arg Pro Phe Lys
        35                  40                  45
```

```
Gly Tyr Glu Gly Ser Leu Ile Lys Leu Thr Ser Lys Gln Pro Val Gly
    50                  55                  60

Phe Val Ser Phe Asp Ser Arg Ser Glu Ala Glu Ala Ala Lys Asn Ala
65                  70                  75                  80

Leu Asn Gly Ile Arg Phe Asp Pro Glu Ile Pro Gln Thr Leu Arg Leu
                85                  90                  95

Glu Phe Ala Lys Ala Asn Thr Lys Met Ala Lys Asn Lys Leu Val Gly
            100                 105                 110

Thr Pro Asn Pro Ser Thr Pro Leu Pro Asn Thr Val Pro Gln Phe Ile
        115                 120                 125

Ala Arg Glu Pro Tyr Glu Leu Thr Val Pro Ala Leu Tyr Pro Ser Ser
    130                 135                 140

Pro Glu Val Trp Ala Pro Tyr Pro Leu Tyr Pro Ala Glu Leu Ala Pro
145                 150                 155                 160

Ala Leu Pro Pro Pro Ala Phe Thr Tyr Pro Ala Ser Leu His Ala Gln
                165                 170                 175

Met Arg Trp Leu Pro Pro Ser Glu Ala Thr Ser Gln Gly Trp Lys Ser
            180                 185                 190

Arg Gln Phe Cys
        195
```

<210> 64
<211> 168
<212> PRT
<213> Homo sapiens

<400> 64

```
Gln Val Arg Thr Leu Phe Val Ser Gly Leu Pro Val Asp Ile Lys Pro
1               5                   10                  15

Arg Glu Leu Tyr Leu Leu Phe Arg Pro Phe Lys Pro Val Gly Phe Val
            20                  25                  30
```

```
Ile Phe Asp Ser Arg Ala Gly Ala Glu Ala Ala Lys Asn Ala Leu Asn
        35                  40                  45

Gly Ile Arg Phe Asp Pro Glu Asn Pro Gln Thr Leu Arg Leu Glu Phe
    50                  55                  60

Ala Lys Ala Asn Thr Lys Met Ala Lys Ser Lys Leu Met Ala Thr Pro
65                  70                  75                  80

Asn Pro Ser Asn Val His Pro Ala Leu Gly Ala His Phe Ile Ala Arg
                85                  90                  95

Asp Pro Tyr Asp Leu Met Gly Ala Ala Leu Ile Pro Ala Ser Pro Glu
            100                 105                 110

Ala Trp Ala Pro Tyr Pro Leu Tyr Thr Thr Glu Leu Thr Pro Ala Ile
        115                 120                 125

Ser His Ala Ala Phe Thr Tyr Pro Thr Ala Thr Ala Ala Ala Ala Ala
    130                 135                 140

Leu His Ala Gln Val Arg Trp Tyr Pro Ser Ser Asp Thr Thr Gln Gln
145                 150                 155                 160

Gly Trp Lys Tyr Arg Gln Phe Cys
                165
```

<210> 65
<211> 188
<212> PRT
<213> Drosophila melanogaster

<400> 65

```
Gln Leu Gln Lys Pro Ala Pro Ala Phe Ala Gly Thr Ala Val Val Asn
1               5                   10                  15

Gly Val Phe Lys Asp Ile Lys Leu Ser Asp Tyr Lys Gly Lys Tyr Leu
            20                  25                  30

Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu
        35                  40                  45
```

```
Ile Ile Ala Phe Ser Glu Ser Ala Ala Glu Phe Arg Lys Ile Asn Cys
    50                  55                  60

Glu Val Ile Gly Cys Ser Thr Asp Ser Gln Phe Thr His Leu Ala Trp
65                  70                  75                  80

Ile Asn Thr Pro Arg Lys Gln Gly Gly Leu Gly Ser Met Asp Ile Pro
                85                  90                  95

Leu Leu Ala Asp Lys Ser Met Lys Val Ala Arg Asp Tyr Gly Val Leu
            100                 105                 110

Asp Glu Glu Thr Gly Ile Pro Phe Arg Gly Leu Phe Ile Ile Asp Asp
        115                 120                 125

Lys Gln Asn Leu Arg Gln Ile Thr Val Asn Asp Leu Pro Val Gly Arg
    130                 135                 140

Ser Val Glu Glu Thr Leu Arg Leu Val Gln Ala Phe Gln Tyr Thr Asp
145                 150                 155                 160

Lys Tyr Gly Glu Val Cys Pro Ala Asn Trp Lys Pro Gly Gln Lys Thr
                165                 170                 175

Met Val Ala Asp Pro Thr Lys Ser Lys Glu Tyr Phe
            180                 185
```

<210> 66
<211> 188
<212> PRT
<213> Homo sapiens

<400> 66

```
Arg Ile Gly Lys Pro Ala Pro Asp Phe Lys Ala Thr Ala Val Val Asp
1               5                   10                  15

Gly Ala Phe Lys Glu Val Lys Leu Ser Asp Tyr Lys Gly Lys Tyr Val
            20                  25                  30

Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu
        35                  40                  45
```

```
Ile Ile Ala Phe Ser Asn Arg Ala Glu Asp Phe Arg Lys Leu Gly Cys
    50                  55                  60

Glu Val Leu Gly Val Ser Val Asp Ser Gln Phe Thr His Leu Ala Trp
65                  70                  75                  80

Ile Asn Thr Pro Arg Lys Glu Gly Gly Leu Gly Pro Leu Asn Ile Pro
                85                  90                  95

Leu Leu Ala Asp Val Thr Arg Arg Leu Ser Glu Asp Tyr Gly Val Leu
            100                 105                 110

Lys Thr Asp Glu Gly Ile Ala Tyr Arg Gly Leu Phe Ile Ile Asp Gly
        115                 120                 125

Lys Gly Val Leu Arg Gln Ile Thr Val Asn Asp Leu Pro Val Gly Arg
    130                 135                 140

Ser Val Asp Glu Ala Leu Arg Leu Val Gln Ala Phe Gln Tyr Thr Asp
145                 150                 155                 160

Glu His Gly Glu Val Cys Pro Ala Gly Trp Lys Pro Gly Ser Asp Thr
                165                 170                 175

Ile Lys Pro Asn Val Asp Asp Ser Lys Glu Tyr Phe
            180                 185
```

<210> 67
<211> 184
<212> PRT
<213> Drosophila melanogaster

<400> 67

```
Pro Ala Pro Ala Phe Ala Gly Thr Ala Val Val Asn Gly Val Phe Lys
1               5                   10                  15

Asp Ile Lys Leu Ser Asp Tyr Lys Gly Lys Tyr Leu Val Leu Phe Phe
            20                  25                  30

Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Ile Ala Phe
        35                  40                  45
```

```
Ser Glu Ser Ala Ala Glu Phe Arg Lys Ile Asn Cys Glu Val Ile Gly
    50                  55                  60

Cys Ser Thr Asp Ser Gln Phe Thr His Leu Ala Trp Ile Asn Thr Pro
65                  70                  75                  80

Arg Lys Gln Gly Gly Leu Gly Ser Met Asp Ile Pro Leu Leu Ala Asp
                85                  90                  95

Lys Ser Met Lys Val Ala Arg Asp Tyr Gly Val Leu Asp Glu Glu Thr
            100                 105                 110

Gly Ile Pro Phe Arg Gly Leu Phe Ile Ile Asp Asp Lys Gln Asn Leu
        115                 120                 125

Arg Gln Ile Thr Val Asn Asp Leu Pro Val Gly Arg Ser Val Glu Glu
    130                 135                 140

Thr Leu Arg Leu Val Gln Ala Phe Gln Tyr Thr Asp Lys Tyr Gly Glu
145                 150                 155                 160

Val Cys Pro Ala Asn Trp Lys Pro Gly Gln Lys Thr Met Val Ala Asp
                165                 170                 175

Pro Thr Lys Ser Lys Glu Tyr Phe
            180
```

<210> 68
<211> 185
<212> PRT
<213> Homo sapiens

<400> 68

```
Pro Ala Pro Asn Phe Lys Ala Thr Ala Val Met Pro Asp Gly Gln Phe
1               5                   10                  15

Lys Asp Ile Ser Leu Ser Asp Tyr Lys Gly Lys Tyr Val Val Phe Phe
            20                  25                  30

Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Ile Ala
        35                  40                  45
```

```
Phe Ser Asp Arg Ala Glu Glu Phe Lys Lys Leu Asn Cys Gln Val Ile
    50                  55                  60

Gly Ala Ser Val Asp Ser His Phe Cys His Leu Ala Trp Val Asn Thr
65                  70                  75                  80

Pro Lys Lys Gln Gly Gly Leu Gly Pro Met Asn Ile Pro Leu Val Ser
                85                  90                  95

Asp Pro Lys Arg Thr Ile Ala Gln Asp Tyr Gly Val Leu Lys Ala Asp
            100                 105                 110

Glu Gly Ile Ser Phe Arg Gly Leu Phe Ile Ile Asp Asp Lys Gly Ile
        115                 120                 125

Leu Arg Gln Ile Thr Val Asn Asp Leu Pro Val Gly Arg Ser Val Asp
    130                 135                 140

Glu Thr Leu Arg Leu Val Gln Ala Phe Gln Phe Thr Asp Lys His Gly
145                 150                 155                 160

Glu Val Cys Pro Ala Gly Trp Lys Pro Gly Ser Asp Thr Ile Lys Pro
                165                 170                 175

Asp Val Gln Lys Ser Lys Glu Tyr Phe
            180                 185
```

<210> 69
<211> 194
<212> PRT
<213> Drosophila melanogaster

<400> 69

```
Met Pro Gln Leu Gln Lys Pro Ala Pro Ala Phe Ala Gly Thr Ala Val
1               5                   10                  15

Val Asn Gly Val Phe Lys Asp Ile Lys Leu Ser Asp Tyr Lys Gly Lys
            20                  25                  30

Tyr Leu Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro
        35                  40                  45
```

```
Thr Glu Ile Ile Ala Phe Ser Glu Ser Ala Ala Glu Phe Arg Lys Ile
    50                  55                  60

Asn Cys Glu Val Ile Gly Cys Ser Thr Asp Ser Gln Phe Thr His Leu
65                  70                  75                  80

Ala Trp Ile Asn Thr Pro Arg Lys Gln Gly Gly Leu Gly Ser Met Asp
                85                  90                  95

Ile Pro Leu Leu Ala Asp Lys Ser Met Lys Val Ala Arg Asp Tyr Gly
            100                 105                 110

Val Leu Asp Glu Glu Thr Gly Ile Pro Phe Arg Gly Leu Phe Ile Ile
        115                 120                 125

Asp Asp Lys Gln Asn Leu Arg Gln Ile Thr Val Asn Asp Leu Pro Val
    130                 135                 140

Gly Arg Ser Val Glu Glu Thr Leu Arg Leu Val Gln Ala Phe Gln Tyr
145                 150                 155                 160

Thr Asp Lys Tyr Gly Glu Val Cys Pro Ala Asn Trp Lys Pro Gly Gln
                165                 170                 175

Lys Thr Met Val Ala Asp Pro Thr Lys Ser Lys Glu Tyr Phe Glu Thr
            180                 185                 190

Thr Ser
```

<210> 70
<211> 199
<212> PRT
<213> Homo sapiens

<400> 70

```
Met Ser Ser Gly Asn Ala Lys Ile Gly His Pro Ala Pro Asn Phe Lys
1               5                   10                  15

Ala Thr Ala Val Met Pro Asp Gly Gln Phe Lys Asp Ile Ser Leu Ser
            20                  25                  30
```

```
Asp Tyr Lys Gly Lys Tyr Val Val Phe Phe Phe Tyr Pro Leu Asp Phe
        35                  40                  45

Thr Phe Val Cys Pro Thr Glu Ile Ile Ala Phe Ser Asp Arg Ala Glu
    50                  55                  60

Glu Phe Lys Lys Leu Asn Cys Gln Val Ile Gly Ala Ser Val Asp Ser
65                  70                  75                  80

His Phe Cys His Leu Ala Trp Val Asn Thr Pro Lys Lys Gln Gly Gly
                85                  90                  95

Leu Gly Pro Met Asn Ile Pro Leu Val Ser Asp Pro Lys Arg Thr Ile
            100                 105                 110

Ala Gln Asp Tyr Gly Val Leu Lys Ala Asp Glu Gly Ile Ser Phe Arg
        115                 120                 125

Gly Leu Phe Ile Ile Asp Asp Lys Gly Ile Leu Arg Gln Ile Thr Val
    130                 135                 140

Asn Asp Leu Pro Val Gly Arg Ser Val Asp Glu Thr Leu Arg Leu Val
145                 150                 155                 160

Gln Ala Phe Gln Phe Thr Asp Lys His Gly Glu Val Cys Pro Ala Gly
                165                 170                 175

Trp Lys Pro Gly Ser Asp Thr Ile Lys Pro Asp Val Gln Lys Ser Lys
            180                 185                 190

Glu Tyr Phe Ser Lys Gln Lys
        195
```

<210> 71
<211> 198
<212> PRT
<213> Homo sapiens

<400> 71

```
Met Ala Ser Gly Asn Ala Arg Ile Gly Lys Pro Ala Pro Asp Phe Lys
1               5                   10                  15
```

```
Ala Thr Ala Val Val Asp Gly Ala Phe Lys Glu Val Lys Leu Ser Asp
            20                  25                  30

Tyr Lys Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr
        35                  40                  45

Phe Val Cys Pro Thr Glu Ile Ile Ala Phe Ser Asn Arg Ala Glu Asp
    50                  55                  60

Phe Arg Lys Leu Gly Cys Glu Val Leu Gly Val Ser Val Asp Ser Gln
65                  70                  75                  80

Phe Thr His Leu Ala Trp Ile Asn Thr Pro Arg Lys Glu Gly Gly Leu
                85                  90                  95

Gly Pro Leu Asn Ile Pro Leu Leu Ala Asp Val Thr Arg Arg Leu Ser
            100                 105                 110

Glu Asp Tyr Gly Val Leu Lys Thr Asp Glu Gly Ile Ala Tyr Arg Gly
        115                 120                 125

Leu Phe Ile Ile Asp Gly Lys Gly Val Leu Arg Gln Ile Thr Val Asn
    130                 135                 140

Asp Leu Pro Val Gly Arg Ser Val Asp Glu Ala Leu Arg Leu Val Gln
145                 150                 155                 160

Ala Phe Gln Tyr Thr Asp Glu His Gly Glu Val Cys Pro Ala Gly Trp
                165                 170                 175

Lys Pro Gly Ser Asp Thr Ile Lys Pro Asn Val Asp Asp Ser Lys Glu
            180                 185                 190

Tyr Phe Ser Lys His Asn
        195
```

<210> 72
<211> 106
<212> PRT
<213> Drosophila melanogaster

<400> 72

```
Gln Gly Gln Ser Ser Arg Ala Gln Lys Ala Ala Arg Arg Arg Ser Asn
1               5                   10                  15

Glu Ser Ile Glu Ala Arg Glu Arg Arg Leu Glu Arg Asn Ala Ala Arg
            20                  25                  30

Met Arg Asp Lys Arg Ala Lys Glu Ser Glu Ala Glu Tyr Arg Val Arg
        35                  40                  45

Leu Ala Lys Asn Ala Glu Ala Asn Arg Val Arg Arg Gln Asn Glu Thr
    50                  55                  60

Glu Val Gln Arg Thr Leu Arg Leu Met Lys Asn Ala Ala Arg Gln Arg
65                  70                  75                  80

Leu Arg Arg Ala Ser Glu Thr Val Glu Glu Arg Lys Lys Arg Leu Ala
                85                  90                  95

Lys Ala Ala Glu Arg Met Arg Ile Ala Arg
            100                 105
```

<210> 73
<211> 106
<212> PRT
<213> Homo sapiens

<400> 73

```
Glu Ala Gln Thr Pro Ser Val Arg Lys Trp Ala Leu Arg Arg Gln Asn
1               5                   10                  15

Glu Pro Leu Glu Val Arg Leu Gln Arg Leu Glu Arg Glu Arg Thr Ala
            20                  25                  30

Lys Lys Ser Arg Arg Asp Asn Glu Thr Pro Glu Glu Arg Glu Val Arg
        35                  40                  45

Arg Met Arg Asp Arg Glu Ala Lys Arg Leu Gln Arg Met Gln Glu Thr
    50                  55                  60

Asp Glu Gln Arg Ala Arg Arg Leu Gln Arg Asp Arg Glu Ala Met Arg
65                  70                  75                  80
```

```
Leu Lys Arg Ala Asn Glu Thr Pro Glu Lys Arg Gln Ala Arg Leu Ile
                85                  90                  95

Arg Glu Arg Glu Ala Lys Arg Leu Lys Arg
            100                 105
```